The London School of Economics
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Doctoral dissertation

"Escaping" the Great Depression

Monetary policy, financial crises and banking in Spain, 1921-1935

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Declaration of Authorship

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- Some parts of the data used in Chapters 3 and 4 were collected for my MSc in Economic History thesis, submitted to the Department of Economic History of the London School of Economics and Political Science in 2013.

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- A revised version of Chapter 3 was published at the *European Review of Economic History* in January 2019 under the same title.

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Abstract

This thesis contributes to the historiography of the Gold Standard and the Great Depression by addressing the performance of the Spanish financial sector during the period 1921-1935. Spanish policymakers' options were very limited to respond to the shocks that hit the country during that period. Spain experienced a severe economic contraction during the 1930s, especially during 1931, when depositors ran on banks and the exchange rate continued to deteriorate rapidly. My argument is in contrast with the traditional account that depicts Spain as having escaped the Great Depression because its currency was not convertible to gold and because it did not experience widespread or large bank failures. I argue that exchange rate depreciation did not add to banking stability, but actually transformed the 1931 banking crisis into a twin crisis, a common feature of both the Interwar Period and the more recent emerging market financial crises. Moreover, the sharp drop in asset prices added pressure to bank balance sheets, when liabilities were already under stress. The thesis has four substantive chapters. First, I document the conflicting goals that appeared between the monetization of public debt by the banking sector and the stabilization of the exchange rate between 1928 and 1931, when the Spanish peseta depreciated rapidly. Second, I show that this depreciation limited monetary policy options when depositors ran on banks in the spring of 1931. Bank loans contracted severely due to the limitations on how much emergency liquidity could be provided, thus helping to understand the collapse in private investment that the country experienced. Third, I analyse the reasons and the consequences of the allocation of emergency liquidity at the bank-level. In the last chapter I provide a novel explanation for why Spain did not see widespread bank failures during the Great Depression, in contrast to other countries.

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In the autumn of 2008 I made a short trip to London to visit a friend from childhood that I had not seen for a long time. During this visit, and the many more that the fall of the British Pound kindly helped lengthen, I found out that my friend from childhood had become (had always been, apparently) the most wonderful person I have ever met. Since then, and through endless walks that somehow always ended in a rainy and windy Trafalgar Square, Míriam, you have been caring, understanding and loving. I thank you for having walked always by my side, from London to Barcelona and back to London and then back again and then once more, so I could pursue my academic ambitions and enjoy the opportunities I was given. You did that without asking for collateral, without charging high interest rates and with infinite generosity. I would have never achieved this without your unconditional love and support. If any beauty remains in these lines plagued with obscure and boring lingo, it is for you. Ah, and yes, you were right; more footnotes than text pages. What can I say? Ajde Jano, Clap Hands.

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Finally a word for you, Teo. I was literally in the process of writing these pages (Chapter 3, to be precise) when you knocked at our door late that night in November 2017. Thanks for coming. I am sorry I took the wooden toy letters from you to build the word "Bagehot". One day, you might want to know why on earth did I do that. Good luck in finding this out and, when you do, please let me know. In the meantime, let's have another walk in Brockwell Park. Banana!

Para mis padres, Aurora y Enrique

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Introduction

To read about Spain during the Great Depression of the 1930s is to puzzle oneself. One might read that Spain was the one European country that escaped the Great Depression and then turn the page to find out about a run on banks, a collapsing currency, capital flight or a severe stock market contraction. Turning more pages one would then find political instability, failed military coups, religious and social conflict, proto-fascism and in the end, another, this time successful, military coup. How can such a country be portrayed as escaping the Great Depression? As it is natural, this depends to a great extent on the metrics and definitions used when comparing different countries exposed to similar economic shocks during the interwar years. In this sense, escaping might just work as a relative term, a word used more to illustrate the challenges faced by other countries rather than to provide a faithful description of economic and political developments in Spain. Therefore, it might seem exaggerated to put so much emphasis–include it in the title of a doctoral dissertation even–on that single word. It turns out, however, that it is not. Portraying Spain as escaping the Great Depression does not only depend on the metrics or the words chosen. It also depends on how much do we actually know about economic, monetary and financial developments in Spain during the interwar years.

1.1 Motivation

Learning more about Spain is crucial, given the country's importance in the international historiography and the great narratives of the Great Depression. In these, Spain is not just another country in the sample or a marginal part of the story. Spain is frequently presented as a possible counterfactual. Spain is the only major European country that had not stabilized its currency when the rest of Europe went back to the gold standard during the second half of the 1920s; the Spanish peseta was not convertible into gold. Spain is also one of the few

countries that did not see widespread or large bank failures during the 1930s, as opposed of a number of countries that saw important parts of their banking sectors going under. It is tempting to draw a causal link between these two exceptional features of the Spanish experience: exchange rate depreciation and banking stability. This link is, in fact, a crucial part of the widely-held answer to one of the central questions about the Great Depression: how would countries have fared if they had not been constrained by the Gold Standard? This thesis argues that we need to know more about Spain in order to help answer this question. An exception might not be enough to grant a valid counterfactual.

Spain was indeed exceptional in many crucial ways during the 1920s and 1930s, but in this thesis I argue that this does not imply that it is the counterfactual it is commonly thought of as. If Spain is to be informative to cross-country analyses of the Great Depression, there are other questions that need to be answered first. Was a flexible exchange rate enough to escape the Great Depression? Did Spanish policy makers just outsmart everyone else in designing a monetary framework that would isolate the country from external shocks, or did that policy come as an accident? How much monetary autonomy did Spain actually enjoy during the Great Depression? Why did Spain not see large or widespread bank failures? Can Spain be portrayed as having escaped the Depression or should it be perhaps portrayed as having masked its deep consequences? What are the implications of revisiting the Spanish experience for the international literature on the Great Depression? To answer these questions we need to understand if currency depreciation was a stabilizing factor, as it is commonly thought of, or a rather destabilizing one. If the latter is true, then what did bring about the banking stability we observe in the data? By drawing on a wealth of newly collected and previously unexplored data, this thesis aims to provide an answer to these important questions.

I argue that depicting Spain as having escaped the Great Depression does not reflect the actual developments that the country underwent during the interwar years. Spain suffered from very similar shocks, very similar limitations and as a result it shared very similar outcomes with other European countries. I argue that if Spain did not see its banking system collapse, as other countries did, it was not because it enjoyed unlimited monetary autonomy granted by a flexible exchange rate, as is assumed in most of the historiography of the period. Spain wanted to be on the gold standard; Spanish policymakers, just as their European

neighbors, thought of a stable and strong exchange rate as the cornerstone of economic prosperity. Spanish policymakers did much more than pay lip service to the gold standard, they implemented policies to join the gold club and these policies had implications. Ironically enough, Spain only managed to peg the peseta to gold–to the French Franc–in mid 1932, with strong capital controls in place, and when only a handful of countries were still somewhat stubbornly attached to gold. By that time, Spain had already been exposed to a number of shocks that caused a strong economic contraction.

Crucially, in 1931, following a sudden political regime change from an authoritarian monarchy to a democratic republic, the Spanish banking system experienced a severe liquidity shock that pushed banks to contract credit supply, as monetary authorities faced binding limitations when providing emergency liquidity to overcome the shock. Monetary autonomy did not keep the banking system afloat, because in fact, Spain did not have much more monetary autonomy than other countries on gold. To be sure, whatever small room was available for monetary activism on its own, it was used and it certainly helped; it was necessary, but in no way sufficient. Crucially, specific government interventions in the form of capital controls, negotiation of international financial assistance and policies aimed at protecting the erosion of bank capital helped Spain to keep its banking sector afloat throughout the 1930s. This, however, did not prevent Spain from undergoing a severe economic contraction between 1929 and 1933 which resembled the one experienced by Germany, Italy or France and in which the collapse of financial intermediation was also a key driver.

1.2 Argument

The fluctuations of the peseta during the 1920s and 1930s were not a deliberate decision of Spanish monetary authorities, especially when these implied a depreciation. I argue that right at the end of the Great War, Spain lost an opportunity to introduce a well-defined monetary policy framework that would put monetary authorities in effective control of the evolution of credit. The 1921 Banking Law, which established the Banco de España as the provider of an elastic currency and an eventual liquidity backstop for the rest of the banking sector, failed to determine responsibilities over exchange rate policy. Neither the Government nor the Banco de España held direct responsibility of keeping the peseta at any specific

exchange rate relative to other currencies, at the same time that exchange rate dynamics played a pivotal role in the political backdrop. In contrast, the Law was successful in institutionalizing a system of credit expansion that was based on the indirect monetization of public debt by banks. The Law tied monetary policy to the fiscal needs of past, present and future governments. The Law made sure banks would have an incentive to accumulate government bonds by deeming the latter eligible at the discount window of the Banco de España at subsidized rates. The Banco de España became a passive actor that was only ascribed with the task of "commanding the credit of the nation", while banks continued to fuel a credit boom that added pressure to the external value of the Spanish peseta. This system worked in favour of Spain and its authorities through the first half of the 1920s. However, when the country started accumulating current account deficits in the second half of that decade, and the reversal in international capital flows accelerated, the Spanish peseta started an unstoppable fall.

Unhappy with any sign of *weakness* in the external value of the peseta, the Government took action. At this moment, the 1921 Law revealed its flaws. With one hand, the Government tried to stop the fall of the peseta by borrowing in foreign exchange and conducting a number of failed interventions and by persuading the Banco de España to raise interest rates. With the other hand, the Government kept allowing for banks to monetize their holdings of public debt at subsidized rates, thus canceling out any effects of interest rate changes on bank lending. In the last days of 1929, as stabilization policies had repeatedly failed, the Spanish government embarked into what was expected to be the definitive stabilization plan and issued ten-year gold bonds payable and redeemable in gold or gold-convertible currencies. Bonds were bought by Spanish banks in the expectation that the stabilization would succeed. Spanish banks, however, lacked gold or foreign exchange, so in order to subscribe the bonds, they borrowed gold abroad at very short maturities. Being affected by what economists have dubbed as the "original sin"—that is, being unable to borrow internationally in its own currency—the gold loan planted the seeds of a potential currency mismatch problem in bank balance sheets. As the peseta continued to fall, rolling over these operations became increasingly difficult for banks. Despite that, and with a rallying stock market and the continued increase in bank deposits, the currency mismatch caused by the contracting of the gold loan was the *only* pressure banks faced until 1931.

In 1931, however, banks suffered two additional shocks. First, following the proclamation of the Second Spanish Republic, between April and September depositors withdrew 20% of their funds from the banking sector. This shock to their liabilities, coupled with the already growing currency mismatches caused by the subscription of the aforementioned gold bonds, put banks under severe liquidity pressure, especially in April and May. The Banco de España, even if operating a non gold-convertible currency, faced quantitative limitations on how much liquidity could provide, as any expansion in its fiduciary issue limits had to be approved by the Minister of Finance. The latter, fearing capital flight and the effects of the expansion of base money on the exchange rate, did only authorize the Banco to lend freely to banks once capital controls were in place. This, however, took place a month and a half after banks had suffered their sharpest liquidity shock, which pushed many banks to contract their credit supply. Monetary autonomy in the form of large room for a lender of last resort intervention by the Banco de España was only feasible when Spanish monetary authorities gave up capital mobility. Importantly, only banks that suffered a deposit withdrawal contracted lending significantly. Banks that were not affected by the bank run or borrowed large amounts from the Banco de España continued to lend. This particular part of the argument is elaborated in Chapter 3, for which a revised version was published in January of this year at the *European Review of Economic History*.

Bank assets also suffered from the shocks experienced in 1931. In that year, the stock market suffered a sharp contraction. Spanish banks—mostly universal banks—held large portfolios of private stocks, as well as public debt, which greatly exposed their solvency to developments in the stock market. Aware of this, Spanish authorities sought to provide a fast solution to keep the banking sector afloat. The solution that banks, the Banco de España and the Minister of Finance agreed upon was the suspension of mark-to-market accounting from 1931. Banks were allowed to value their portfolios of securities at 1930 prices. Since Spain did not experience a drop in the stock market in 1929, stock prices had remained in a very high plateau during 1930, despite new issuances of securities had contracted significantly. This intervention allowed banks to keep paying dividends and taxes and to remain nominally solvent, something that would have not been the case if a change in accounting practices had not been granted. This explains why Spain did not witness a chain of insolvencies and in fact did not experience any reduction in bank capital during the 1930s. However, Spanish banks became something very similar to what economists call a "zombie" bank-

ing sector and lending did not recover.

In sum, this thesis argues that exchange rate volatility was not only decried and fought by monetary authorities; more importantly, it did not contribute to improve Spain's financial position and bank stability. In fact, exchange rate dynamics operated in the opposite direction, they created fragilities in the banking sector. It is a fact that the Banco de España intervened as a lender of last resort during 1931, and that this was a necessary step, but this is not enough to explain why Spain was exceptional in terms of bank stability during the Great Depression. Instead, it was a combination of policy measures—that were either absent or came much later in a number of other countries—that kept the banking system afloat. This, however, did not translate in the resumption of economic growth or price stability. The Spanish economy contracted as sharply as the Italian, the French or the German did. Deflation also kicked in from 1933. Bank lending remained depressed. As a result, the Spanish experience does not seem to be a reliable counterfactual for other countries when discussing the links between exchange rate regimes and financial stability during the Great Depression. Spain was exceptional for reasons that had to do with *ad hoc* policy choices that were not necessarily determined by its exchange rate regime.

1.3 Contribution

This thesis contributes to the historiography of the Great Depression and the literature on the development of central banking and financial crises in emerging markets by reconsidering two common assumptions present in the literature on these fields. First, I argue that the reason Spain did not enjoy the monetary autonomy with which it has been commonly described by the historiography is that, in fact, the country had all the features of what today would be called an emerging market. When trying to stabilize its exchange rate, the Spanish Government could not borrow internationally in its own currency, and faced it increasingly difficult to borrow at long term maturities even domestically. The response to this was to borrow in international reserve currencies, which at the time meant gold. This change in the interpretation, which I back with extensive qualitative and quantitative evidence, implies that both the assumption of monetary autonomy and the implications that stem from it need to be readdressed. Doing this puts the causal link between exchange rate depreciation and banking

stability into question.

A second pervasive assumption that this thesis proposes to reconsider is, therefore, the widely held idea that banking stability—measured by the number or size of bank failures—was a by-product of the effects of a depreciating currency. As the argument usually goes, allowing the Spanish peseta to depreciate while other European economies were tied to gold, avoided the debt-deflation dynamics that brought down economic activity and contributed to the collapse of the banking system. Moreover, devaluation is also thought as the reflection of an increase in room for lender of last resort interventions by central banks, which undoubtedly contribute to banking stability. However, this assumption overlooks the fact that devaluation or rapid depreciation of a currency can have very different effects in different contexts. In particular, it can have strong destabilizing effects if the country in question is exposed to currency mismatches, either in the balance sheet of the Government or in the banking sector's. It can also add to political turmoil, especially in a context in which exchange rate stability remained as a key policy objective, even in countries like Spain, that operated non gold-convertible currencies. More importantly, currency depreciation can impose severe limitations on monetary authorities when responding to shocks to the banking sector, as it was the case in Spain in 1931, and as it is commonly the case in emerging market economies. Revisiting the Spanish case by reconsidering these two assumptions implies that the sources of banking stability have to be found elsewhere and, therefore, that the implications of exchange rate flexibility and financial stability during the Great Depression are not fully supported by the Spanish experience.

1.4 Political and macroeconomic context

The 1920s and 1930s in Spain were the most volatile years of the twentieth century. In the autumn of 1923, with the support and approval of the King Alfonso XIII, General Primo de Rivera took power after a military coup and established a Dictatorship that would last until 1930. The Dictatorship was then replaced by the so-called 'Softatorship' that was inevitably compelled to attempt a transition towards more democracy, given the increasing discredit, not only of the Regime in its various forms, but also of the Bourbon Monarchy. After a year of political conflict between the Regime and the Monarchy on the one hand and supporters of a republican alternative on the other, the first clear step to test the demo-

cratic waters was to hold a local election on 12 April 1931. The results of the local elections materialized the discredit of the Monarchy and its various forms of Government. Republican parties won by a landslide in most provinces, including the cities of Madrid, Barcelona and Bilbao. As Admiral Aznar Cabañas–who had been appointed head of Government of the Monarchy two months earlier– famously put it: *"will there be a crisis? Is it not enough crisis that of a country that goes to bed as monarchic and wakes up as republican?"*.

On 14 April 1931, having lost the support of the Army, and with republican supporters celebrating the results of the election in the streets, the Second Spanish Republic was proclaimed and the King and its closer allies fled the country. In what turned out to be a remarkably peaceful transition, given the scope of the regime change, a Provisional Republican Government was formed right after the local elections and the support of the masses opened the door for a change. In May, however, violent clashes between Monarchics and Republicans took place in the streets of several cities and villages; a number of churches and convents were burnt down, including some emblematic buildings such as the Professed House of the Society of Jesus in Madrid. These incidents, which might at first seem unrelated to bank balance sheets, had direct implications for some banks that had very close relations with religious congregations. In particular, as I discuss in Chapters 4 and 5, these ties affected one of the most important banks at the time, Banco Urquijo de Madrid. As a response to these events, and fearing contagious social unrest, the Provisional Government declared a "state of war", the army took the streets and incidents subdued. A month and a half later, in the last days of June 1931, the first General Election was held. Results confirmed the strong support the newborn Republic. After some months of internal disputes, mostly centered around the role of the Catholic Church in the Republic, a Government was formed in November 1931. The new Republican Constitution was voted and approved in December of the same year.

The newborn democracy aimed at reforming Spanish society in several ways. Even if the historiography of the period is still affected by a degree of polarization, it is fair to say that most historians have come to agree in that each of the fronts opened for reform during 1931-33 (the so-called Reformist Biennium) faced a very strong reaction from different factions of the Spanish society. Too hasty a reform program after too long a repressive regime, one can argue, caused too strong a reaction. Land reform, educational reform, the secularization of Span-

ish society or the degree of autonomy granted to different regions like Catalonia or the Basque Country aimed at pushing Spain towards a progressive reform agenda after almost a decade of stagnation in these areas. Between November 1931 and February 1936, Spain embarked into a gradual but increasingly volatile path towards political polarization. Constantly affected by political swings, the implementation and reaction of policies by different governments, the short but intense life of the Second Spanish Republic came to a sudden end with the military coup that started the Civil War in July 1936.

The historiography concerned with the political aims, limitations and threats faced by the Second Spanish Republic is vast. It pales in comparison to the thousands of pages that have been written about the Spanish Civil War, but the political and social history of the 1920s and first half of the 1930s has been an area of extensive research, and continues to be. Next to politics, however, there was the economy. There is a broad agreement in the historiography of the period in that any economic origins of the Spanish Civil War are to be found on structural reasons; an unfinished land reform as well as income and wealth inequality and a general protracted backwardness are amongst the main factors. The effect of specific and sudden economic shocks, which were a feature of the period, however, are commonly downplayed as having had any identifiable influence; Spain is often described as a country that was isolated from the Great Depression.

As its political leaders, the Spanish economy was also bounded by its aims, its limitations, and to some extent, a degree of exceptionality. A peripheral, mostly agricultural but rapidly urbanizing and growing economy, during the 1920s and early 1930s, Spain remained exceptional in the international monetary system. Since it suspended the gold-convertibility of its currency in the late nineteenth century, Spain was the only major European economy that operated a currency that was not convertible into gold during the so-called Classical Gold Standard era (1880-1914) and the Interwar Gold Exchange Standard (1925-1931/36). This exception meant that, by the late 1920s, Spain remained the only major European country whose currency was not stabilized, and that was depreciating. As opposed to most of its European neighbors, neither the Spanish Government nor the Banco de España held formal responsibility over the maintenance of a specific level of the exchange rate. This, which at first sight can be seen as granting the room for maneuver lacked by other countries tied to gold-convertibility, eventually turned into a trap. All the reputation that the incumbent government gained

when the peseta appreciated collapsed as the exchange rate started to deteriorate. In particular, the Dictatorship fell into that trap when in 1926 it tied the prestige of the Regime to the value of the Spanish peseta. In that year, General Primo de Rivera claimed that the appreciation that the currency was experiencing was an unequivocal sign of the strength of the Regime's economic program. Two years later, he could not get out of the trap. As the peseta started depreciating rapidly from 1928, Primo de Rivera (and the subsequent heads of Government after he retired) tried, policy after policy, Minister of Finance after Minister of Finance, to stop the fall of the peseta. Having placed the strong exchange rate as the most salient outcome of the economic success of the Regime, the fall of the Spanish currency in foreign exchange markets could only anticipate its collapse. Crucially, Spanish authorities did not deliberately allow the peseta to fall. All governments decried the fall of the peseta and introduced measures to stop it. To illustrate this, it is perhaps useful to reproduce the opinion of the representative of the Rothschild Frères in Spain, Ignacio Bauer, when in 1930 he wrote to the House of Rothschild in Paris[1]: *"it is hard to believe how much the question of the exchange rate weights in all aspects of Spanish politics. (...) Mr. Argüelles* [the Minister of Finance] *has been replaced by Mr. Wais. I have nothing to say against the new Minister, on the contrary, he is intelligent, young and honest. His predecessor, however, had the same qualities, and despite all this, the peseta continued to fall. Nowadays everything depends on the exchange rate"*. Despite several attempts to stop it, the depreciation of the peseta survived the Dictatorship and the Softatorship. In fact, and along with mounting financial fragility, the fall of the peseta did not only survived these regimes, it contributed to their demise. The depreciation was only stopped by a combination of external financial support, capital controls and the departure of Sterling from the gold standard in September 1931.

The evolution of the peseta was not the only problem Spain faced when, overnight, it transitioned from an authoritarian monarchy into a democratic republic. As soon as the Republic was proclaimed, banks suffered deposit withdrawals, especially during the second quarter of 1931. Depositors ran on banks and hoarded cash, but also exported capital and sold their pesetas in foreign exchange markets. In parallel, the stock market fell drastically, after having remained relatively flat during 1930, although the total amount of private issuances decreased sharply from their peak in 1929. Therefore, while Spain was relatively isolated from the developments of 1929 in international stock markets, from April

1931, the price of public and private securities fell rapidly. The Spanish peseta, which had been almost finally stabilized in March, started falling rapidly again. Capital flight was, as it is commonly the case, a cause and a consequence of exchange rate dynamics. When the banking panic subdued, during the third quarter of the year, the banking sector had lost 20% of its deposits, loans outstanding had contracted by a similar percentage, asset prices remained depressed (albeit public debt recovered relatively fast) and private investment had collapsed. All in all, however, the banking, currency and stock market crisis of 1931 took little casualties: only four, relatively small banks failed during this year.

If one was to delete the last sentence of the previous paragraph, it could be easily claimed that 1931 was a terrible year for the Spanish financial system. In fact, doing so reveals the important similarities between Spain and other countries that underwent deep economic difficulties during 1931, like Germany. The two countries suffered similar economic contractions during the Great Depression (Figure 1.1), and were plagued by political instability during this period. It can also be argued that both countries experienced strong exchange rate pressure, even if they were under different exchange rate arrangements for most of the interwar years. Both countries were under constant threat of capital flight, introduced capital controls, and experienced comparable shocks to their banking system (Figure 1.3). Spanish banks lost 20% of their deposits between April 1931 and September 1931, a figure that is very similar in size and timing to the shock experienced by German banks (Balderston, 1991; Schnabel, 2004a). Interestingly, the comparison, even if suggestive at first, falls into pieces as soon as we bring banking stability to the picture. Germany, as a number of other European countries, witnessed large bank failures during the 1930s, while the Spanish banking system remained remarkably stable after suffering very similar shocks.

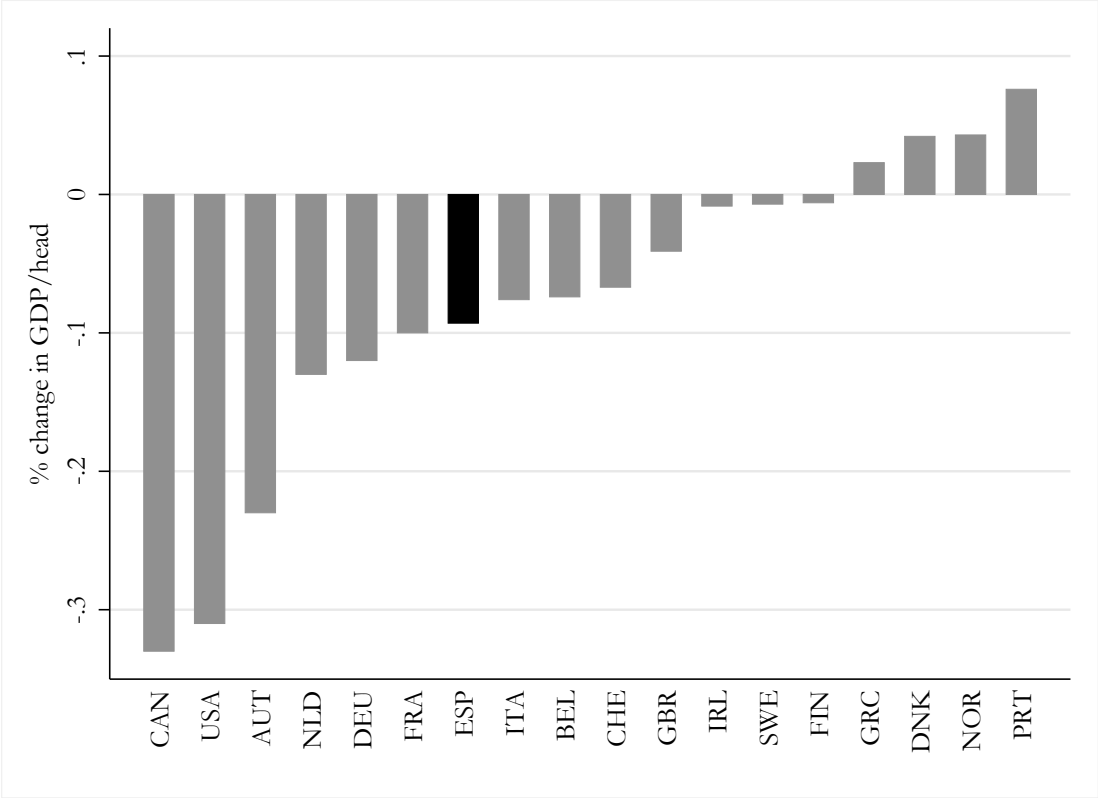


Figure 1.1: Change in GDP per capita in %, (1929-33)
Source: Bolt and Van Zanden (2013).

Here lies the puzzle. How could Spain, a country that suffered all the aforementioned shocks, exit 1931 with virtually all its banking system afloat? Is it the case, as implied in most of the literature about the Great Depression, that currency depreciation shielded Spain from the limitations that the Gold Standard imposed on its European counterparts? Was non gold-convertibility of the Spanish peseta enough to keep the Spanish banking system afloat? Do bank failures tell the full story about the actual performance of the banking system during the 1930s? In the next four chapters, I shall argue the contrary. Spain was exceptional because its currency was not convertible to gold and because its banking sector remained afloat despite suffering very strong shocks during the 1930s. However, establishing a causal link between exchange rate depreciation and banking stability, and taking the number of bank failures as a reliable sign of having escaped the Great Depression is, as I argue, inaccurate. Given the importance of Spain in the conventional narrative about the economic collapse of the 1930s, revisiting its financial history has important implications for understanding the role of the Gold Standard in the Great Depression.

1.5 The Great Depression, the Gold Standard and banking stability in Spain: a literature review

Over the course of the last forty years, research on causes, transmission and consequences of the Great Depression has developed extensively. New empirical evidence both at the macroeconomic and microeconomic level has contributed to filling important gaps in the historiography, as well as to deepening our understanding of some well established historical facts. As the international literature developed, and despite substantial progress in the 1980s and 1990s, important aspects of the impact of the Great Depression in Spain have remained unexplored, especially in the subfield of financial history and also in terms of empirical research. Here I discuss the main contributions made by the literature and contextualize my contribution to this body of research.

1.5.1 The Spanish historiography

Pablo Martín-Aceña's book *"La política monetaria en España, 1919-1935"* (Monetary Policy in Spain, 1919-1935) remains the most comprehensive analysis of the period[2]. This work was complemented with new long-run estimates of monetary aggregates also provided by the same author (Martín-Aceña, 1984, 1985). Martín-Aceña's work focused primarily on the evolution of monetary policy formulation, analysing both the intellectual framework in which it operated (the international context), as well as in the specific policy decisions taken (the domestic context). He concluded that over the Interwar Period, the Banco de España (BdE) took a rather passive stance in monetary policy affairs. Engaged in almost constant conflict with the Government about the responsibilities over exchange rate stability and the ultimate causes of currency depreciation, the central monetary institution failed to emerge as a central bank that could command the credit of the nation, even if this was its main mandate.

While Martín-Aceña documented the numerous and unsuccessful attempts to transform the BdE into a modern monetary authority, his conclusions are more optimistic with regards to the impact of the main shocks of the Great Depression in Spain. In particular, he highlighted the crucial role of the BdE as lender of last resort during the 1931 financial crisis. According to his work, the combination

of a proactive Ministry of Finance which allowed for increases in the fiduciary issue coupled with the liberality with which the BdE lent during the crisis, are the main explanations of banking stability and the relatively mild economic contraction that Spain suffered vis-à-vis other European economies. That said, he also concluded that the overall monetary policy stance in Spain after 1931 was definitely not expansive and that Spanish monetary authorities' decision to peg the peseta to the French Franc in 1932 and join the gold bloc contributed to import deflationary pressures (Martín-Aceña, 1984, 2013). This view was partially shared by Hernández Andreu (1983), who also argued that the depreciation of the peseta between 1928 and 1932 did not avoid a sharp economic contraction in Spain, and that the decision to peg it to the Franc in 1932 was also detrimental for the Spanish economy. In general, however, he attributed the poor performance of the Spanish economy during the Great Depression to structural deficiencies, mainly an underdeveloped agriculture and an external sector dependent on exports of primary goods and imports of machinery[3].

Compared to the depth of the analysis of the institutional foundations, intellectual framework and policymaking decisions of the Banco de España provided by Martín-Aceña (1984), his analysis of the evolution of individual Spanish banks during the 1920s and 30s remained captured mostly by the evolution of monetary aggregates, although he provided qualitative evidence of bank-specific events when relevant. In a contribution aimed at filling this gap, Gabriel Tortella and Jordi Palafox switched the focus from monetary policymakers to the receivers of the policy—the banking and industrial sectors—by incorporating bank balance sheets to their analysis of banking and industry during the early 20th century (Tortella and Palafox, 1984). Their analysis relied on annual data from the *Anuario Financiero y de Sociedades Anónimas de España* (AFYSADE), and included mostly consolidated balance sheet data of the Spanish banking system, albeit they narrowed the focus to the largest six banks for certain parts of their work. Overall, their conclusions about the impact and the consequences of the 1931 crisis in Spain, the role of the Banco de España during the whole period, as well as the stance of monetary policy during the 1930s are, if acknowledgedly provisional, remarkably optimistic. Tortella and Palafox (1984) concluded that during the 1930s[4]: *"(...) nothing massive or dramatic occurred, no really important banks suspended payments; no large scale "salvaging operation" was required. (...) The banking system as a whole never had a liquidity problem."*

In essence, their conclusion stems from three main arguments. First, banks never had a liquidity problem, so the sharp contraction in bank lending that the economy suffered can be explained entirely by the deterioration in economic expectations brought about by the regime change that took place in April 1931. Falling demand due to a sharp deterioration in economic expectations brought down bank lending. Second, while the authors acknowledged a contraction in balance sheet items relating to commercial banking, they concluded that other assets like securities (public bonds and industrial securities) experienced healthy increases. Third, bank profits, if not comparable to those accruing during the 1920s, remained healthy during the 1930s[5]. Similarly, Palafox (1991) concluded that the impact of the Great Depression in Spain was limited; the path of domestic economic activity—measured by the evolution of industrial production—constituted an exception to the rest of the world. The author highlighted the differential path of deflation between Spain and other countries in the world; however, his work also showed that deflation kicked in in 1932-33, after Spain stabilized the peseta and pegged it to the French Franc. Palafox concluded that the 1928-31 depreciation, if decried by the Government, had positive effects, mostly through inflation, which compensated for the distortions it created in the determination of import prices in pesetas. The benefits of the depreciation outweighed the costs. Regarding the impact of the proclamation of the Republic on the financial sector, Palafox (1991) showed that deterioration in economic expectations had started in 1930, but that the impact of the regime change had severe consequences for the Spanish economy. In particular, he discussed the impact of deposit withdrawals on the banking system in 1931 and the following years. The sharp contraction in lending, he concluded[6]: *"(...) can not be attributed only, and certainly not mainly, to a drop in the demand for credit, but to the attitude of the great banks, which affected by the deterioration in expectations, contracted supply."*

Palafox rejected the hypothesis that monetary factors or liquidity pressure could explain the contraction in lending; instead, he attributed it entirely to the change in expectations[7]. In general, in his interpretation of the crisis, there is no role for a contraction in lending explained by liquidity constraints suffered by different banks; any source of heterogeneity in the lending behaviour of individual banks had to do with differences in their expectations over the newborn Republic.

In a collection of papers, José Luis García Ruiz challenged some elements

of the previous account, while he broadly agreed with Palafox (1991) in that credit supply played a role in the contraction of lending and private investment. García Ruiz (1987, 1992, 1993) argued that bank lending might have been, in fact, affected by supply constraints. In contrast with the account provided by Tortella and Palafox (1984), he pointed to a "liquidity crisis" in 1931, and argued that banks restricted credit supply during the 1930s, a period dominated by high real interest rates compared to other countries in Europe, something that Comín (2012) also documented, but that was not reflected in nominal interest rates, which fell between 1932 and 1936. García Ruiz's contribution, if innovative and certainly at odds with some of the previously established accounts, also relied on aggregated data and suffered from the lack of archival evidence available at the time. Accordingly, his provisional conclusions left the door open for *"a deepening that is only going to be feasible when private bank archives are open."*[8]

More recently, authors interested in a long term approach to financial crises have reassessed the importance of the 1931 crisis in Spain. In a recent article that focuses on the importance of current account deficits as determinants of financial crises, Betrán and Pons (2018) provide a comparative analysis of the severity of financial crises in Spain between 1850 and 2015. Their interpretation of the 1931 crisis coincides with that of Martínez-Ruiz and Nogués-Marco (2014), but contrasts with previous classifications of the 1931 crisis, such as the one in Bordo, Eichengreen, Klingebiel, and Martínez-Peria (2001). Betrán and Pons (2018) describe it as a triple crisis: currency, banking and stock market. Using qualitative and quantitative evidence on the evolution of monetary aggregates, their own estimates of current account imbalances and estimates of annual GDP from Prados de la Escosura (2003), they show that Spanish GDP lost an accumulated 13.04% compared to the pre-crisis trend after 1931 and they argue that current account imbalances sit at the core of the explanations of financial crises during the period. Recent updated GDP per head estimates for the period provided by Prados de la Escosura (2017) also suggest that previous accounts might seem too optimistic; he concluded that the real contraction experienced by Spain during the 1930s is comparable to European countries and therefore *"challenges the view of a weaker impact due to Spain's relative international isolation and backwardness."*[9]. To be sure, the figures of the GDP contraction in 1931 pale relative to the post-Bretton Woods crises that Spain experienced, which are twice as strong by that metric. However, if the 1931 crisis is compared to the 1925 crisis–whereby the development of the Spanish financial sector and the structure of the economy is more

comparable–the difference is clear: 1931 was a severe crisis, while the GDP loss from the 1925 banking crisis was negligible. A similar account is provided by Martín-Aceña (2013): the 1931 crisis was much more severe than that experienced in 1925. A more recent experience might help contextualize these figures: by 2016, the GDP of the United States was still 13% below its pre-crisis trend[10].

There are, therefore, two broad interpretations of the developments of Spanish banking during the Great Depression. On the one hand, Tortella and Palafox (1984) described the crisis as mild and argued that its consequences were limited. On the other hand, the works of Martín-Aceña (1984, 1995, 2013), García Ruiz (1987, 1992, 1993), Palafox (1991) and Betrán and Pons (2018) argue that 1931 was definitely a crisis year, although they differ on the main drivers. That said, they all agree in that banking, currency and stock market problems coincided and they had an effect on the evolution of GDP, which had been growing steadily since the mid-1920s. As stressed above, in some cases the conclusions reached are conditional on the metric chosen to compare Spain to other countries. For example, Tortella and Palafox (1984) do not attach too much importance to the contraction in bank lending as a sign of distress during and after 1931, while they emphasize the evolution of bank portfolios of securities and profits as a proof of the strength of the Spanish banking system during the 1930s. In contrast, García Ruiz (1993) went beyond bank failures, and concluded that if there was a contraction in bank lending, this was mostly because banks reallocated their portfolios towards more liquid and safe assets. At the same time, a liquidity shortage during the 1931 crisis is not a crucial part of his explanation of the crisis[11]. The argument he presented emphasizes high real interest rates and credit rationing, rather than the persistence of a sharp liquidity shock. The most updated conclusion of the Spanish historiography is, therefore, that Spain had a crisis in 1931, albeit there is no agreement on its exact extent, its causes and its actual scope.

Interestingly, as I shall show in the next section, the international literature that flourished in the late 1980s and 1990s about the international dimension of the Great Depression relied mostly on the conclusions reached by Tortella and Palafox (1984). Most international accounts and cross-country comparisons do not incorporate the explanation of the evolution of monetary policy provided by Hernández Andreu (1983) and Martín-Aceña (1985, 1995), but also the not so optimistic approach about banking during the 1930s taken by García Ruiz (1987, 1992, 1993).

1.5.2 The international historiography

The conclusions reached by Tortella and Palafox (1984) about the performance of the Spanish banking sector during the 1920s and 30s influenced greatly the perception of the Spanish experience during the Great Depression in the international literature. Accordingly, the most influential and comprehensive accounts of the period tend to conclude–to summarize it in one representative quote– that *"Spain avoided the Great Depression by never being on the Gold Standard"* (Temin, 1993). This narrative has, in turn, been incorporated also by the most recent publications in the history of financial crises; the last example of this is the work the historical recurrence and common patterns of financial crises provided by Reinhart and Rogoff (2009). As recently documented by Albers (2018), it is almost common knowledge that Spain escaped the Great Depression.

Besides the fact that the aforementioned account of Spanish banking developments can be considered perhaps overly optimistic, as I discuss in the following chapters, there are at least two important additional shortcomings with the way the Spanish experience is introduced in cross-country analyses. Frequently, these analyses rely on dummy variables to define countries' exchange rate arrangements or monetary frameworks, and also use dichotomic definitions of banking crises: a country had a crisis or it did not. This approach, while justified from the point of view of the methodology needed to establish international comparisons given binding data constraints, hides important nuances. Dummy variables fail to capture structural variations in the relationship between the operation of the exchange rate regime and outcome variables. Similarly, a binary definition of banking crises fails to account for the variety of countries' experiences[12]. Between the black and white of a dummy variable, there is a wide spectrum of relevant gray (Urban, 2009).

This matters because Spain is usually presented as an important example in the literature connecting adherence to the Gold Standard, banking panics and economic performance during the Great Depression. Unable and unwilling to let exchange rates depreciate during the late 1920s and the early 1930s, governments and central banks enforced deflationary pressures on their economies (Bernanke and James, 1991; Eichengreen, 1992; Eichengreen and Temin, 1997). Deflation did not only operate through changes in household consumption, expectations and

uncertainty, as highlighted by Temin (1989, 1993), Romer (1990) or Olney (1999). It also contributed to add pressure on bank balance sheets through debt-deflation spirals (Fisher, 1933; Bernanke and Gertler, 1990). Importantly, these pressures contributed to increased financial fragility. Bank failures, in turn, caused the costs of financial intermediation to rise, transforming monetary shocks such as the one described by Friedman and Schwartz (1963) into a real contraction in economic activity through the collapse of the supply of bank loans (Bernanke, 1983; Bernanke and James, 1991; Calomiris and Mason, 1997; Anari, Kolari, and Mason, 2005; Richardson, 2007; Richardson and Troost, 2009; Postel-Vinay, 2016). In this context, gradual exchange rate depreciation (or sharp devaluation) would have avoided countries falling into the Depression or helped recovering from it. This is because exchange rate depreciation eased the effects of deflationary pressures in industrial production (Choudhri and Kochin, 1980). It facilitated the adjustment of current account deficits by boosting exports (Eichengreen and Sachs, 1985); it also contributed to banking stability during the 1930s (Grossman, 1994; Temin, 2008). In particular, suspending gold convertibility allowed central banks to engage in monetary expansion and gave them more latitude to respond to banking crises (Temin, 1989; Eichengreen, 1996). Therefore, not being on the gold standard allowed for countries to incorporate a more aggressive lender of last resort reaction to their toolbox (Grossman, 2010). Somewhat taking the argument to the extreme, some authors have argued that in a country that operated a fiat currency (a variant, but not the only one of gold-inconvertibility), the monetary base could be expanded without constraints to assist the banking system, thus allowing the exchange rate to take the hit (Martin, 2009). Although recent works on the history and theory of banking and central banking like Grossman (2010) or Ugolini (2017) question the extent to which this is actually a feasible policy in the presence of fiscal and/or political constraints (even in flexible exchange rate regimes), this account has been incorporated to cross-country and long term analyses of the determinants and the incidence of financial crises. Reinhart and Rogoff (2009) summarize this widely-held narrative by claiming that Spain: *"experienced runs, but the Bank of Spain could lend freely as a lender of last resort."*[13]

A second limitation of the conventional methodology is that it downplays the importance of twin crises and, in particular, their incidence in emerging markets and peripheral economies. An explanation for this–as Schnabel (2004a) argued–is that the body of economic literature about the incidence and channels of transmission of twin crises was not born until the late 1990s. This could certainly

explain why a number of the works outlined above did not include the possibility of a twin crisis when they observed the sharp depreciation of the peseta between 1928 and 1931. Another explanation is that, given the need for a standard for comparison between countries with different levels of financial development, and the difficulty to find a representative measure of the latter, researchers had to relativize the importance of the differences between core and peripheral economies in their ability to deal with financial crises. To be sure, however, the effects of devaluations or sharp depreciations depend greatly on the composition of economic agents' liabilities, which tend to be very different in core and peripheral countries. Either way, I argue that the conventional interpretation of the Great Depression in Spain puts too much emphasis on the effects of currency depreciation in countering deflationary pressures, mostly through the influential work of Choudhri and Kochin (1980), but also Temin (1993) and Grossman (1994). This is done at the expense of taking into account that rapid exchange rate depreciation can have negative effects on the banking system if the latter holds significant short term liabilities denominated in foreign currencies, as widely documented by Kaminsky and Reinhart (1999), Krugman (1999), Chang and Velasco (2000) and Calvo (2006), among others. In this case, exchange rate depreciation worsens currency (and maturity) mismatches in bank balance sheets and can contribute to additional pressure on the banking system. This is especially the case if the latter is already under liquidity problems as depositors are withdrawing funds from banks. Moreover, this account seems to ignore the fact that during the Interwar Period, fixed exchange rates and adherence to the Gold Standard were a very ingrained aspiration in policymakers' agenda (Eichengreen, 1992; Eichengreen and Temin, 1997; Mouré, 1991, 2002; Straumann, 2010). As I show in Chapter 3, Spain was no exception to this trend; very few economic agents could see benefits stemming from a falling peseta. Some observers acknowledged that it contributed to ease deflationary pressures, but this was definitely over in 1931 when prices began to stagnate and fall as international deflation and internal factors affected the Spanish economy.

Therefore, there seems to be limitations in the way the international historiography has represented the Spanish experience during the Great Depression. First, the use of dummy variables to determine the incidence of banking crises fails to capture the nature of such crises. Second, the assumption that exchange rate depreciation can be used as a linear predictor of banking stability is also problematic, as it fails to account that the marginal returns to exchange rate de-

preciation from the point of view of banking stability are not linear and might be negative altogether. The next two subsections contextualize these limitations in the international historiography and explain why the Spanish case is important to improve our understanding of the mechanisms underlying banking stability during the Great Depression.

1.5.3 The relevance of the Spanish experience

The importance of Spain as a benchmark for comparison in the literature about the Great Depression can hardly be exaggerated. It is literally reflected in the following quote from one of the most influential papers in the historiography, Choudhri and Kochin (1980)[14]. In their paper, Ehsan U. Choudhri and Levis A. Kochin compared the performance of industrial production and the price level with the evolution of exchange rates between 1928 and 1932. They found a positive correlation between exchange rate depreciation and industrial production. As they put it:

> *"The centerpiece of our evidence is Spain, which, during the Great Depression, operated on flexible exchange rates combined with fairly stable monetary conditions while most of the world was committed to the gold standard. A comparison of Spanish experience in this period with the gold-standard countries provides a striking historical experiment on the insulation capabilities of the flexible exchange rate system. (...) Thus, at the onset of the Great Depression, Spain was the only major country operating on a flexible exchange rate system. During the depression, while Spain went through several changes in its government, the Spanish economy was largely unaffected by political turmoil until the Civil War several years after. The Spanish peseta was flexible until March of 1934. (...) Spanish prices and output remained, for the most part, unaffected during the depression period. Indeed, the 1932 level of prices and production in Spain was not much different from the level in 1928. (...)* [Spain] *virtually escaped the Great Depression."*

Interestingly, and as opposed to the rest of authors that deal with the Spanish experience, Choudhri and Kochin (1980) did not draw from Spanish historiography to contextualize or inform their empirical findings. While their data come from the *League of Nations Statistical Yearbook*, the qualitative information and

the narrative of the Spanish experience (both economic and political) is drawn from Delaplane (1934), a Ph.D. dissertation from Duke University. The nature of the secondary sources used by these authors can explain the arguably optimistic account about Spain's performance during the Great Depression. Interestingly, however, they acknowledged that *"the Spanish money supply behaviour (...) remained reasonably stable except in the year 1931 when there was a sizeable decrease in the money stock"*, albeit they did not report why, or discuss its implications for the sharp contraction in industrial production they observed from 1931. In addition, there are many aspects of the Spanish experience that are not accurately captured by the data that Choudhri and Kochin (1980) had access to. As Albers (2018) has recently pointed out, the focus on industrial production as a proxy of economic activity during the Great Depression, while indicative, comes with strong limitations. Empirical work by Rodrik (2013) showed that unconditional convergence can take place in the industrial sector but not necessarily in less modern parts of the economy. This implies that industrial production can grow independently from other sectors, which might be quantitatively more important, and thus can render a misleading picture of the overall evolution of economic activity. Accordingly, using principal component methodology to estimate the evolution of monthly economic activity, Albers (2018) found a sharp contraction in economic activity in Spain. As Figure 3.1 shows, while private investment collapsed by more than 30% during 1931, industrial production *only* contracted by 10%. In fact, GDP contracted almost 10% during the period that Choudhri and Kochin (1980) discussed, which is in sharp contrast with their conclusion that output remained unaffected (Figure 1.1). In addition, Spain did indeed experience political volatility during the 1920s and 30s, before the Civil War. In fact, political shocks were instrumental to the magnification of some economic and financial shocks. Finally, it is inaccurate that the Spanish peseta floated until 1934. This is not a minor question, because the fact that Spain stabilized in 1932 shows that even right after the worst of the crisis, exchange rate stability remained a main policy goal. Spanish monetary authorities pegged the peseta to the French Franc in 1932 (i.e. to gold) overvaluing the exchange rate and importing deflation (Hernández Andreu, 1983; Martín-Aceña, 1984). This is reflected in the evolution of wholesale prices, which fell by 8.2% between 1931 and 1935 (Maluquer de Motes, 2013). While deflation kicked in later and with less intensity in Spain than in other countries, it still shows up in the data.

While Choudhri and Kochin (1980) focused only on the link between exchange rate depreciation and economic activity–thus not including the banking system in their analysis–other authors put the focus on the implications of exchange rate policy for central bank interventions during the Great Depression. In this strand of the literature, one of the most influential works is Temin (1993). Peter Temin's *"Transmission of the Great Depression"* has been highly influential in the historiography of the Great Depression, and since it summarizes the interpretation of the Spanish experience in international academic debates quite succinctly, it is also worth quoting at length[15]:

> *"Spain stands as the prime example of a country that avoided the worst excesses of the Great Depression by staying off the gold standard. Did it also avoid financial panics? Spain tried to fix the peseta in the late 1920s as France and Italy stabilized their currencies, but the deflationists lacked the political muscle. The government continued to run deficits which were monetized by healthy banks. There was a run on Spanish banks contemporaneous with the failure of the Credit Anstalt in Austria. Martín-Aceña (1992) cites internal causes, but the peseta was under pressure as well. Very few banks failed, and the experience is not thought of as a panic. The Bank of Spain acted as a lender of last resort enabled to do so by two factors. The banks held large portfolios of government debt that could be sold for cash. And unlike the Reichsbank, the Bank of Spain was not bound by the inflexible standard of the gold standard. It did have to raise Spanish interest rates to protect the value of the peseta, but it continued to lend freely-as Bagehot advised (Tortella and Palafox, 1984)."*

In fact, Temin's interpretation of the 1920s is accurate. However, it is the second part, the one that deals with the policy response to the crisis, that seems to rely too much on an overly optimistic account. Moreover, Temin's statement about bank failures shows how Spain's exceptional experience in this particular aspect of banking crises has pushed to the conclusion that there was no panic. As stated above, however, the use of dummy variables in this type of analysis can fail to capture important nuances at the country level. The exact place at which we draw the line that separates crisis from "noncrisis" is inevitably discrete and risks bundling together clearcut cases with borderline cases. It also creates a difficulty in comparing two different episodes for the same country in different

moments in time. Even if I do not explicitly deal with the 1925 banking crisis in Spain, its comparison with 1931 is an interesting example of the challenges of finding a single metric for comparing banking crises. For instance, in their work on the links between deflation, the Gold Standard and financial crises during the Great Depression, Ben S. Bernanke and Harold James considered that Spain had a banking crisis in 1925 but not in 1931. This was because one relatively important bank failed in 1925 and only four relatively small banks failed in 1931 (Bernanke and James, 1991). The bank in question, Crédito de la Unión Minera (CUMI), accounted for 4.7% of total assets before its failure in 1925, while in 1931 failed banks accounted for 2.5% of total assets[16]. As Tortella (2001) and Martín-Aceña (2013) documented, risk of contagion from CUMI to Banco Central (BCEN), pushed General Primo de Rivera to force the BdE to intervene. Despite there was a lender of last resort operation–credit to BCEN–a regionally important bank went under (CUMI). In 1931, in contrast, there was also a lender of last resort intervention, but there were relatively smaller bank failures.

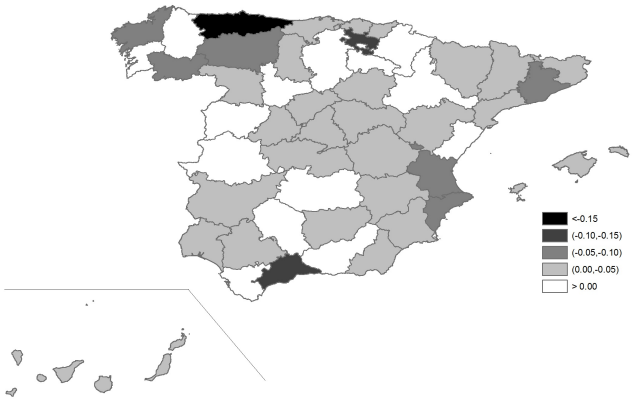
This would suggest that in fact, 1925 was a "crisis" year in banking, but 1931 was not. The question is where to draw the line. For example, if we look at the evolution of bank deposits and bank lending, the 1925 crisis pales next to the magnitude of 1931. Moreover, GDP growth was unaffected by the 1925 crisis, while in 1931 it accumulated a 13% negative deviation from pre-crisis trend (Betrán and Pons, 2018). In addition, the 1925 crisis was geographically contained. In 1925, sharp deposit withdrawals only took place in the provinces of the Basque Country (where the bank had its headquarters) and Asturias (where the bulk of mining activity was located), while the rest of the country was mostly unaffected. In contrast, deposit withdrawals in 1931 took place nationwide (Martín-Aceña, 1984; Tortella, 2001). This can be seen in Figure 1.2, which maps the average deposit drop suffered by banks at the province level in 1925 and 1931[17]. It also includes a map that shows the share of total coal production in Spain by the beginning of 1925, also at the provincial level. As can be seen, the 1925 crisis was concentrated in the regions where shocks to the mining industry were relevant, while banks in the rest of the country did not suffer from that shock. This contrasts with 1931, in which a number of provinces were severely affected by deposit withdrawals. Even accounting for the fact that deposit losses in branched banks are mostly attributed to the provinces of Madrid, Barcelona and Vizcaya, the nation-wide character of the 1931 crisis is evident. This comparison suggests that bank failures, if obviously a crucial feature of banking crises, do not tell the

full story on their own. The difficulty lies, then, in finding a definition of banking crisis that can consistently work across borders and across time.

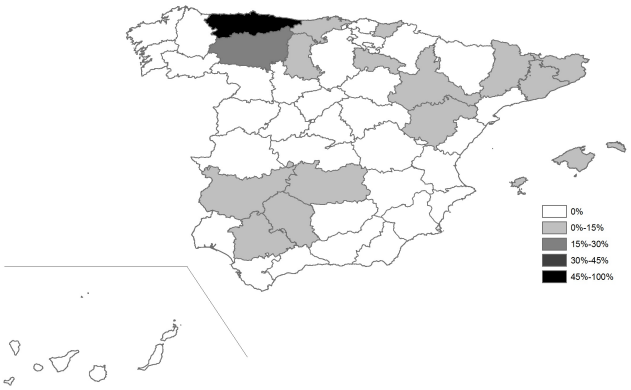
The case of Spain during the 1930s illustrates the implications of this challenge. Depending on whether we consider the year 1931 in Spain as a crisis or not matters crucially for our assessment of the connections between the Gold Standard, banking instability and the Great Depression. A clear example of the importance of learning about the borderline cases in cross-country comparisons that use dichotomous outcome variables is the influential work by Grossman (1994). Richard Grossman conducted a cross-sectional study including 25 countries, and found that currency depreciation between 1929 and 1931 contributed significantly to predict bank stability. In fact, this was the main robust result that he obtained from the data he had access to[18]. The more currency depreciation a country underwent, the less likely it was to suffer a banking crisis; conversely, countries that remained on gold for longer were associated with a higher probability of crisis. At one extreme of the distribution of exchange rate depreciation during 1929-31 sits Spain, with the Spanish peseta falling 42.8% during that period. Using annual data, Grossman (1994) estimated univariate and multivariate probit models in which the outcome variable was dichotomous: countries either had a crisis or not. While he openly acknowledged the limitations of this approach and the difficulties of finding general patterns in the data, his findings are supportive of the conventional account that suggests that allowing the exchange rate to take the hit would have prevented a number of banking crises during the Great Depression. Grossman's results are important because of their strong implications for the literature. For example, as Temin (2008) put it in his discussion of the ultimate causes of the German (twin) crisis of 1931:

> *"Not all countries on gold had banking crises, but there were no banking crises in countries off gold. This strong result implies that being on the fixed exchange rate of the interwar gold standard was an important cause of banking crises. In fact it was the only systematic cause that Grossman found in his sample"*[19].

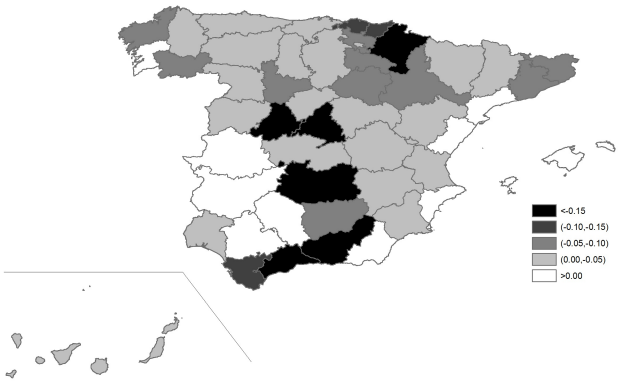
In his cross-sectional analysis of the determinants of banking stability during the Great Depression, Grossman (1994) coded countries as having suffered a banking crisis if a high proportion of bank failed, an especially large or important bank failed or if there was a Government intervention that prevented failures. If



(a) Deposit losses, 1925q1



(b) Share of coal production, 1925



(c) Deposit losses, 1931q2

Figure 1.2: Two crises compared, 1925 vs. 1931

Source: own calculations based on *Boletines del Consejo Superior Bancario* for deposit losses and *Estadistica de la produccion de carbones en España durante los nueve ultimos años, formada por el Consejo de Mineria, Anuario 1925-1926, Fondo Documental, Instituto Nacional de Estadistica (INE)* for coal production.

none of the three applied, countries were coded as not having a crisis. Grossman discussed the potential for a "third category" that included countries for which none of the above applied, but still experienced banking difficulties, like Finland or Spain[20]. Interestingly, while in the case of most countries he could use the publications of the League of Nations (*Commercial Banks, 1925-33*), Grossman was unable to obtain contemporary accounts that documented the actual scope of the 1931 crisis in Spain. This highlights, as described above, the unfortunate disconnection between some detailed research papers published in Spain and the international historiography of the Great Depression. As a result, both the limitations of the dichotomous outcome variable analysis as well as the unavailability of a detailed contemporary description of the scope of the 1931 banking crisis in Spain can have important implications for the conclusions we reach about the role of the Gold Standard in causing banking crises during the Great Depression.

The importance of a better understanding of the Spanish experience during the Great Depression can be shown by replicating Grossman's work and showing the sensitivity of the results he obtained to changes in the coding for Spain. Columns 1 and 4 in Table 1.1 show the replication of Grossman's single and multi-variable strongest results with "crisis" as dependent variable and currency depreciation, population per bank and central bank discounts as covariates. A first interesting exercise is to recode Spain as "crisis" country and then run the same specification. This is done in Columns 2 and 6 of Table 1.1. Doing this halves down the coefficient associated to currency depreciation and weakens its statistical significance. Even if we ignore the change in statistical significance, Spain alone accounts for around half of the association that Grossman found between exchange rate depreciation and banking stability. Not surprisingly, the country that Grossman argued that, alongside Spain, ought to have been placed in a hypothetical third category, Finland, accounts for the other half[21]. As I argued above, it is crucial to determine whether Spain's case should be included in the "crisis" or in the "non-crisis" group, as this has implications for the conclusions we can draw on the links between exchange rate depreciation and bank stability during the Great Depression. A second alternative estimation is then to recode Finland. In in Columns 3 and 7 of Table 1.1, I recode Finland as a "crisis" country; the loss of significance is similar to the one associated with Spain. In turn, Columns 4 and 8 recode both Spain and Finland as "crisis" countries. Doing so renders the coefficient on currency depreciation insignificant. While the case of Finland falls out of the scope of this thesis, it also highlights the importance of

the constraints imposed by definitions and specific metrics in our understanding of the underlying reasons for bank stability during the Great Depression.

	(1) Grossman	(2) ESP crisis	(3) FIN crisis	(4) ESP & FIN crisis	(5) Grossman	(6) ESP crisis	(7) FIN crisis	(8) ESP & FIN crisis
Currency value	0.0540**	0.0298*	0.0366*	0.0188	0.0723**	0.0570*	0.0454**	0.0319
	(2.47)	(1.69)	(1.95)	(1.09)	(2.54)	(1.95)	(2.07)	(1.33)
Population per bank					-0.00473**	-0.00514**	-0.00368*	-0.00413**
					(-2.02)	(-2.11)	(-1.86)	(-1.97)
Δ Central bank discounts					0.000898	0.00133**	0.000633	0.00106*
					(1.53)	(2.05)	(1.32)	(1.85)
Constant	-4.874**	-2.526	-3.145*	-1.433	-5.630**	-3.953	-3.192*	-1.723
	(-2.38)	(-1.58)	(-1.83)	(-0.91)	(-2.29)	(-1.63)	(-1.68)	(-0.84)
N	25	25	25	25	25	25	25	25
Log-likelihood	-13.55	-15.69	-15.11	-16.24	-7.916	-8.008	-10.12	-9.349

t statistics in parentheses. * $p < .1$, ** $p < .05$, *** $p < .01$

Table 1.1: Determinants of banking crises: replication of single and multi variable probit results in Grossman(1994)

Note: dependent variable is 0 for "noncrisis" countries and 1 for "crisis" countries. Independent variables are calculated as the ratio of their value in 1931 over 1929. For Spain, Grossman (1994) calculated currency devaluation as the ratio between the value of the peseta in December 1931 and its gold parity of 1868 at (25.22 pesetas per Sterling). For the sake of comparison with the original source, the table does not include marginal coefficients, which might be easier to interpret. Coefficients associated with central bank discounts differ slightly from the original source, but overall the estimation is virtually the same. Source: see Table 4 and 5 in Grossman (1994, p.675-76).

After reestimating the same model, the association between exchange rate depreciation and bank stability is revealed as highly dependent on the borderline cases. The results of this replication suggest that our understanding about the relationship between exchange rate regimes and financial stability during the Great Depression can improve by learning more about these cases. The way in which exchange rate depreciation is included in cross-country comparisons during the Great Depression can be challenging, because a falling currency can quickly turn from a blessing into a curse. Depreciation or exchange rate pressure meant very different things for Britain in September 1931 or for the United States in March 1933 than for Germany during 1931 or for Spain between 1928 and 1931. As Accominotti (2012) concluded, Britain's departure of the Gold Standard in September 1931 did not have significant effects on the British banking system because its liabilities were denominated in Sterling. This contrasts with Isabel Schnabel's account of the German twin crisis of 1931 (Schnabel, 2004a). Importantly, this also contrasts with the case of Spain, whose banks, as I show in Chapter 3, held a large portfolio of short term debt denominated in Sterling

in 1931. Therefore, predicting the determinants of banking stability as a linear function of currency depreciation—both theoretically and empirically—can fail to capture the fact that currency depreciation can be the specific channel through which countries' shocks to the banking system turn into full-blown financial crises. In this sense, this type of analysis risks downplaying the insights from the literature that appeared in the 1990s about the connections between currency and banking crises, the so-called twin crises (Krugman, 1999; Kaminsky and Reinhart, 1999; Chang and Velasco, 2000; Glick and Hutchinson, 2000). It also underestimates the importance of capital outflows, which naturally go hand in hand with exchange rate depreciation. Capital flight was not only a key determinant of countries' monetary policies during the Great Depression, as Wolf (2008) shows; the role of the international capital cycle has also been recently highlighted as severely limiting monetary policy options in emerging economies (Farhi and Werning, 2014; Rey, 2015). As such, the role of exchange rate depreciation in the form of non-adherence to the Gold Standard risks being overstated[22]. In fact, twin crises plagued the Interwar Period; Germany, Austria and Hungary experienced severe twin crises in 1931 (Schnabel, 2004a,b; Macher, 2017, 2018) and, as I show in Chapter 3, Spain was not an exception in this sense.

Drawing a line between "crisis" and "non-crisis" countries based on discrete measures of banking difficulties is a difficult task, because it is determined by definitions that might fail to capture interesting variation. Introducing non-discrete measures, however, is also challenging. In their influential work on the effects of deflation and banking crises during the Great Depression, Bernanke and James (1991) studied the extent to which a banking panic had an impact on countries' real economic activity during the 1930s. Spain is again an interesting case in their study. In order to include to control for the incidence of banking panics in each specific year, Bernanke and James had to introduce a dummy variable to determine whether a country had a banking panic or not. Similar to Grossman (1994), having to draw a line to determine the incidence of a crisis and make countries comparable, Spain is coded as having a banking crisis in 1925 but not in 1931. This is because, as I discussed above, an important bank failed in 1925 but not in 1931. To be sure, in this case, changing the coding of Spain does not affect the general argument presented by Bernanke and James (1991); undoubtedly, banking panics mattered a great deal during the Great Depression, regardless of how Spain is coded. However, it is still interesting to see the importance of improving our knowledge about the Spanish experience and the challenges of finding an en-

compassing but useful definition of banking crisis. To this end, Figure 1.3 shows the annual change in the deposit-currency ratio between 1930 and 1936 for all countries included in their sample. Countries which Bernanke and James (1991) code as experiencing a panic during each year reported are represented in black bars, while those that are coded as not having experienced a panic are in light gray. For the sake of representation, I exclude the country-years that witnessed increases in the deposit-currency ratio, and country-years below the 10% threshold that Bernanke and James (1991) established as relevant. While this is not the variable that the authors used to determine the incidence of a banking panic in their empirical analysis, they report this data as informative of the monetary shocks suffered at the country level, which is then illustrative of the incidence of banking panics. The contraction in the deposit-currency ratio in 1931 in Spain is stronger than the average. It is also much stronger than the shocks experienced by the United States in 1931 and 1933, and is certainly comparable to the shock suffered by that country during the Chicago banking panic of 1932 (Calomiris and Mason, 1997; Postel-Vinay, 2016). It is also stronger than the shock the French banking sector underwent in 1931 (Baubeau, Monnet, Riva, and Ungaro, 2018). Restricting the sample to 1931, the Spanish banking system ranks as the eighth suffering the sharpest liquidity shock in that year, among the sample of 25 countries; it ranks above the United States, France or Belgium, for example. Again, the Spanish case reveals the difficulties of translating a continuous variable (such as the currency-deposit ratio) into a comparable, discrete metric for banking crises in the form of bank failures.

Unfortunately, recent comparative exercises that use modern econometric techniques and that emphasize the extent to which other policies mattered for countries' emergence from the Great Depression do not include Spain, precisely because of its differential exchange rate regime at the time. This is the case, for example, of the analysis of the role of capital controls in the recovery of the Great Depression by Mitchener and Wandschneider (2015) or empirical approaches to discuss the reasons for countries' entry or exit of the interwar Gold Standard like Wandschneider (2008) and Wolf (2008). Despite this somewhat natural exclusion of the Spanish experience is justified because the country operated a gold-inconvertible currency during most of the Great Depression, leaving Spain out of these international comparisons has an impact in the historiography. In particular, it does not address the fact that Spain committed to the Gold Standard in the last months of 1930, and that after the more visible parts of

the 1931 crisis had subdued, Spanish monetary authorities incorporated Spain to the gold bloc in 1932. These are not trivial or residual policy choices, they had an impact that is an undeniable part of the country's experience during the 1930s.

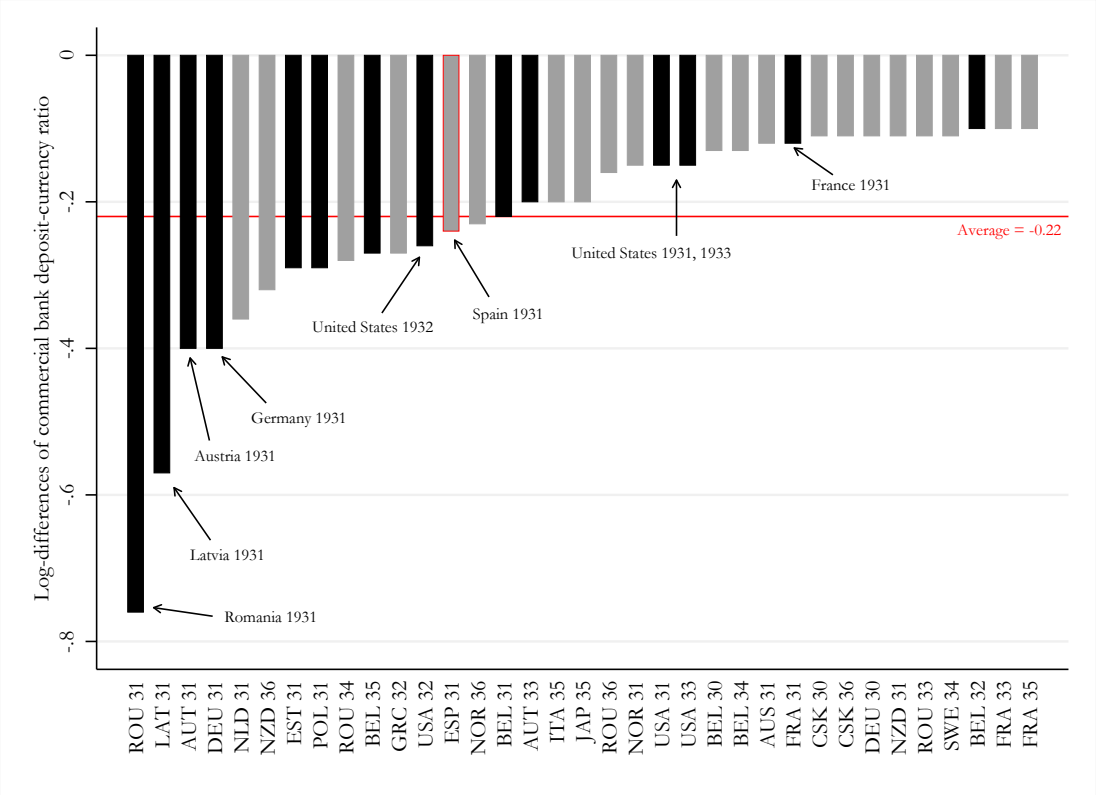


Figure 1.3: Changes in country-year deposit-currency ratios, 1930-36

Note: figures are log-differences of the ratio of commercial bank deposits to money and notes in circulation. Source: Bernanke and James (1991).

All the evidence presented here suggests that the way in which we classify Spain matters crucially for our understanding of the role of the Gold Standard in the Great Depression. Therefore, it is necessary to revisit the case of Spain in more depth. In general, the way the country is included in the historiography detailed above is the result of a lack of detailed data–both quantitative and qualitative–on the actual developments in the banking sector during the 1930s. Much work was done in the 1980s and 1990s, but since then, a number of new archival sources have become available. Exploiting these sources should help us know more about the actual extent of financial and banking developments in Spain during the Great Depression, and should improve our understanding of how much room would have countries had if they suffered the same shocks under a non-gold convertible currency.

One might be tempted to use the benefit of hindsight to praise Spain and its monetary authorities for their *superior* monetary regime during the Great Depression. The truth is that, rightly or wrongly, Spain wanted and tried to be on gold. This had important implications that need to be taken into account. If Spain is to be useful as a counterfactual, then, it has to be for different reasons. To this end, to illustrate what is the actual informative value of Spain for the literature of the Great Depression, this thesis provides evidence and argues that Spain can only be a useful counterfactual because it shows that room for monetary autonomy depended on a number of factors that were not only related to gold-convertibility. Exchange rate depreciation did not contribute to banking stability. Instead, Government intervention in the form of capital controls–which allowed the Banco de España to lend freely, the negotiation of international financial assistance and policies aiming at protecting the asset-side of the banking system saved the day. These saved the day, perhaps the days, or even the weeks, but not much more. Certainly not enough to escape the Great Depression.

1.6 Chapter summaries

The argument of the thesis is structured in four chapters. Each chapter consists of a self-contained argument and speaks to slightly different strands of the literature on the Great Depression as well as to the literature concerned with the development of central banking, money markets and financial crises in emerging economies. However, the four chapters can be read as pieces of the broader argument described above.

1.6.1 Chapter 2: Conflicting goals: banking reform, debt monetization and the fall of the Spanish peseta, 1921-1931

The first substantive chapter of the thesis analyses the conflicting goals that Spanish fiscal authorities faced as a result of the 1921 Banking Law. This Law, which was passed right after the failure of the Banc de Barcelona in 1920, institutionalized a system of indirect monetization of public debt that rendered changes in the BdE's Discount rate ineffective. Banks were granted access to the lending

facilities of the BdE by pledging public debt as collateral. While this made sure the Government could finance its deficits, it revealed incompatible with exchange rate stability, a goal that emerged as crucial in the late 1920s. Until 1927, this system worked well for all parts involved: the Government, the banking sector and the BdE. However, as the peseta started falling from that year, this mechanism revealed the time-inconsistency problem in which fiscal authorities had put themselves: this form of fiscal dominance left the discount rate of the BdE unable to exert any countering pressure to the rapid depreciation of the peseta, which fell rapidly from 1928 to 1931. This pushed to the introduction of exchange rate interventions that ended up failing repeatedly. In 1930, as monetary authorities were unable to stabilize the exchange rate due to the continued "indirect monetization" of public deficits by the banking sector, the former decided to issue gold bonds in a desperate attempt to stop the fall of the peseta. Unable to borrow abroad, the Government relied on Spanish banks doing so. They borrowed at short term maturities in foreign currency in order to provide the Government with long term credit in gold-convertible currencies. As a result of this, Spanish banks ended up holding large amounts of short term liabilities denominated in foreign exchange and thus became exposed to any eventual shock to their liabilities. The shock, which came in April 1931, as well as its consequences, are analyzed in the the three following chapters.

1.6.2 Chapter 3: The limits to lender of last resort interventions in emerging economies: evidence from the Gold Standard and the Great Depression in Spain

This chapter shows how Spanish policymakers found their hands tied when trying to allow the Banco de España to lend freely during the 1931 banking panic, because they had to choose between expanding the monetary base and allowing for capital mobility. Currency mismatches accumulated in the banking sector as a result of previous failed exchange rate stabilization attempts limited their policy options. Ultimately, Spanish authorities had to forgo capital mobility and thus the BdE was only allowed to lend freely after capital controls were in place.

The second key element discussed in the chapter is the evolution of bank lending. I show that the collapse in bank lending (which fell by more than 20% in 1931) can be explained by the limitations that monetary authorities faced in

providing emergency liquidity to banks when these were faced with a sudden run on their deposits following the proclamation of the Second Spanish Republic in April 1931. Some banks borrowed enough to not only convert their depositors funds into cash, but also to expand their loan portfolios during the crisis and the following years. Others, fell short of liquidity and contracted lending sharply. Interestingly, I also find that banks that did not suffer a run on their deposits did not contract lending during 1931, which strongly suggests that I am identifying a credit supply shock caused by a liquidity shortage in the banking system.

The findings of this chapter, thus, raise two important questions. First, if some banks managed to borrow enough from the BdE while others experienced severe liquidity problems, how was emergency liquidity provided and what determined the allocation among different banks during the crisis? The second question is: present all these limitations, why did Spain not see a widespread chain of bank failures during 1931? Both questions are addressed in Chapters 4 and 5.

1.6.3 Chapter 4: Allocation of limited lender of last resort assistance: bank-level evidence from the 1931 crisis in Spain

In this chapter, I disaggregate emergency liquidity provision by the BdE at the bank level in order to understand how and why it was allocated among different banks. Bringing the focus down to the bank level provides a very different picture of the 1931 crisis, compared to the evidence that has been available so far. Liquidity provision was not proportional to banks' liquidity *needs*, especially during the first two months of the crisis, when Spanish monetary authorities could not allow the Banco de España to lend *freely* until they introduced capital controls.

First, I address the the way in which the BdE screened collateral brought to the discount window before the crisis. I document how being a frequent discounter of bills of exchange with the BdE before 1931 provided a superior access to the discount window during the crisis. This happened because the other lending facility, short term collateralised credit against public debt became more expensive to banks as the price of public debt fell sharply during the crisis, despite efforts by the Government to restore credibility in public finance and the aim of the BdE at not increasing haircuts charged in these operations. Second, I show

that the inability of monetary authorities to deem the BdE Discount Rate as an effective monetary policy tool to price banks' access to central bank liquidity window also explains the way in which emergency liquidity was distributed among banks during the crisis. Because the BdE Discount Rate was below the rate at which banks discounted bills in the market, the BdE had to rely on collateral eligibility to manage its lending activity through the outright purchase of bills of exchange. In some cases, this criteria seems to have been based more on the long-term relationship lending between the BdE and some banks, than in the nature of the bills it rediscounted, while in others the BdE would screen bills thoroughly even before they were discounted by a given bank. This differential access to the discount window helps understand the bank-level provision of emergency liquidity and, speaking back to Chapter 2, highlights some of the consequences of the 1921 Banking Law failure in modernizing Spain's money market.

1.6.4 Chapter 5: Explaining bank stability in Spain during the 1930s

This chapter addresses the question of how could Spain emerge from the 1931 banking crisis with such remarkable bank stability, given all the shocks and policy limitations explained in previous chapters. I provide three explanations for this, which complement the necessary (but not sufficient) intervention of the BdE as lender of last resort. First and foremost, Spain suspended mark-to-market accounting from 1931 for both public and private bonds and shares. This shielded bank balance sheets from an average fall of 13% in the price of public debt and a stronger and more permanent 32% drop in private shares and bonds. I construct a counterfactual estimate of how would have banks' portfolios of securities evolved if they would have reflected market prices, and estimate how much capital would have been eroded as a consequence. This calculation—while limited to a certain extent by data availability—reveals that the largest Spanish banks would have experienced large losses with potentially critical consequences to their capital, while an additional eleven banks would certainly have been unable to survive, had they been forced to mark their assets to market.

A second reason for bank stability comes from the social origins of depositors. The strata of society that, in 1931, saw the political regime change as opportunity, instead of threat, had traditionally deposited its money in savings banks, and not so much in banks, while the opposite was true for the other group. As

a result, savings banks did not suffer any deposit losses, while banks were "disproportionately" exposed to them. Finally, I show that complete secrecy about the actual extent of individual bank deposit losses was key to contain the panic. This is illustrated by the case of Banco Urquijo de Madrid. This bank, which had close connections with the Society of Jesus, lost more than 50% of its deposits during the crisis and never recovered them. The lion's share of the deposit loss was due to the withdrawal of funds associated with religious institutions. The bank only survived because it was absorbed by the Banco de España, a move that, as I show in Chapter 4, crowded other banks from accessing the limited emergency liquidity available.

The four chapters summarized above are the main pillars of the argument I present in this thesis and suggest that the reconsideration of the Spanish experience has important implications for our understanding of the role of exchange rate depreciation, monetary policy and financial crises during the Great Depression. They are followed by a conclusion in which I outline the main implications of the thesis, its limitations and further steps for research.

Conflicting goals: banking reform, debt monetization and the fall of the Spanish peseta, 1921-1931

2.1 Introduction

By the late 1920s, the Spanish peseta was the only major European currency that had not been stabilized. In contrast to most countries on gold, Spain saw its currency depreciate rapidly from 1928 until 1931, only reaching stabilization by mid-1932 and with strong capital controls in place. This chapter analyses one of the underlying driving forces behind the fall of the peseta: the monetization of public debt by the banking sector. Already from the onset of the First World War, but increasingly after 1920, the Spanish Government ran persistent budget deficits (Comín and Diaz, 2005a). Unable to introduce an effective fiscal reform that increased government revenue through direct income and wealth taxation, a sizable shortfall persisted (Comín and Martín-Aceña, 1984; Melguizo, 1986; Santamaría, 1986). In particular, 1921 was the year where the largest issuance of public debt took place, although during the late 1920s, issuances of various types of Government debt also experienced a large increase (Figure 2.1). By virtue of the 1921 Banking Law, and in order to make sure that the Government's debt issuance would be successful, banks were allowed to buy public debt in the primary market and automatically monetize it by obtaining loans against collateral from the Banco de España at rates that were set below the yield of government bonds. Moreover, the Law established that the Government would have the right to set specific interest rates for collateralized borrowing at the discount window of the BdE for new issuances of government bonds, in order to make sure bond issuances were successful and banks had incentives to accumulate public debt[23].

With the reform of the banking system in 1921, the Government also aimed

at turning the Banco de España into a "bank's bank": by being progressively withdrawn from its commercial business, the aim was to transform central bank money almost entirely into reserves that banks could then use to create deposits and extend loans. Since the BdE had been forbidden from holding public debt since the early 1900s, this new mechanism allowed for the monetization of public debt without the latter showing up in the balance sheet of the central bank as government bonds, but rather as credit to commercial banks. The 1921 Banking Law outsourced the monetization of public debt to commercial banks. At the same time, the Law provided commercial banks with a liquidity backstop offered by the BdE on government bonds at any time. That said, money creation was not unlimited; the Law also included a fiduciary limit that had to be negotiated with the Government in the event that money in circulation reached the limit. This limit, however, was only reached during the 1931 crisis, when depositors ran on banks and emergency liquidity provision by the BdE caused notes in circulation to hit the upper fiduciary limit twice (as I discuss in Chapter 3). Until then, and especially from 1927, bank lending boomed.

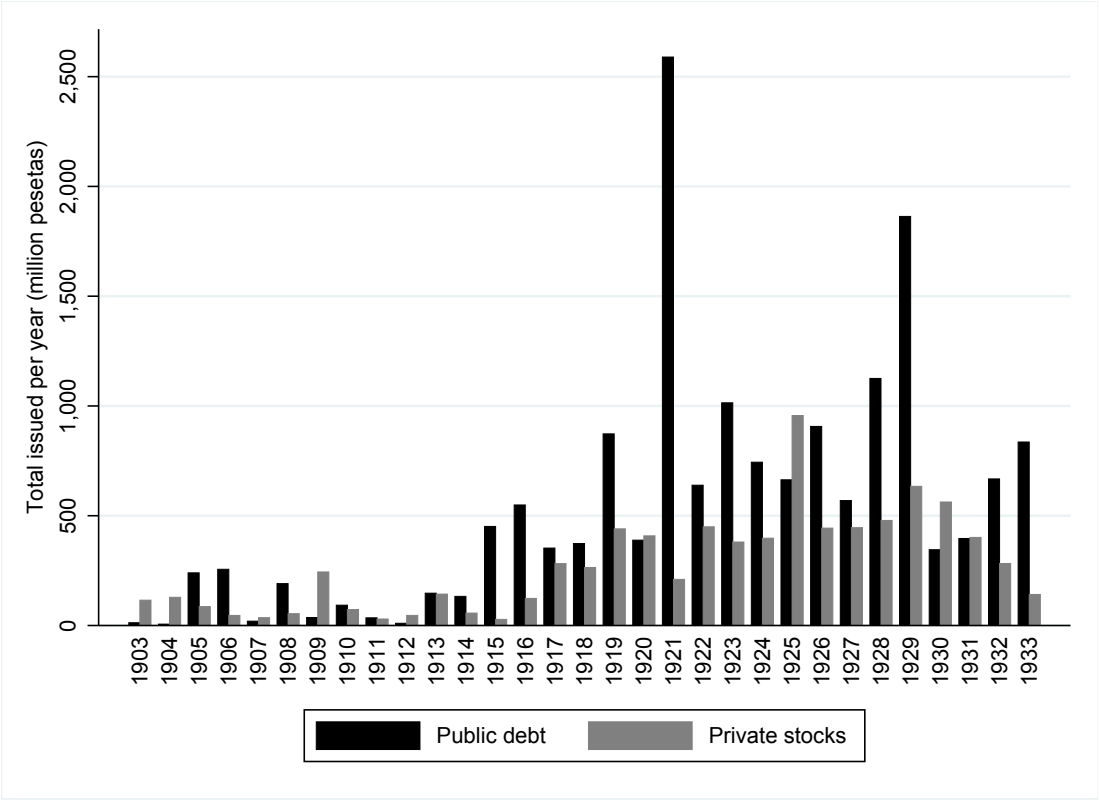


Figure 2.1: Public bonds and private stocks issued (1903-33)

Source: *Las emisiones de valores en España de 1903 a 1930 (1930)* and *Emisiones realizadas en España (1934), Anuario Historico INE.*

The 1921 Banking Law was highly successful in achieving some of its main goals. First, it helped the Government find a way for financing its deficits and ensuring subscription to its new bond issuances. Some elements of financial repression contributed to this goal as well; banks were obliged to hold at least 20% of the debt they purchased from the Government until maturity. Second, it provided bondholders (banks) with an automatic liquidity backstop and the ability to create deposits by monetizing government bonds. As a result, between 1922 and 1934, public debt in bank balance sheets almost tripled (Table 2.1). Third, the Law discharged the BdE of direct government deficit monetization and also from any responsibility over the evolution of the exchange rate. The achievement of these goals, however, came with a price. Once the debt monetization system had been established in such a way, it revealed incompatible with exchange rate stability. The government fell into a time-inconsistency problem in which its fiscal needs were incompatible with a stable exchange rate, a goal that–not the least because of its strong links with the reputation and fate of several Ministers of Finance–was helplessly pursued from 1928. Monetary policy became dominated, to a great extent, by the fiscal needs of the Government and, despite a desperate but quickly reverted attempt at sharply balancing the budget in the first half of 1930, the depreciation of the peseta did only start receding in the autumn of 1931, and became finally stabilized in 1932 (García Delgado, 1979; Martín-Aceña, 1985).

Year	Assets	Loans	Public Debt	Private stocks	3-month bills	Deposits	Capital
1922	7362	1857	995	635	1041	4210	1449
1925	7628	1666	1231	729	1248	3981	1384
1928	10069	1992	1860	1111	1479	5379	1463
1930	12500	2569	2381	1554	1784	6808	1728
1931	11575	2092	2371	1501	1554	5943	1757
1934	12250	2040	2716	1553	1523	6471	1719
% Δ 1922-34	66%	10%	173%	145%	46%	54%	19%
% Δ 1922-30	70%	38%	139%	145%	71%	62%	19%
% Δ 1930-34	-2%	-21%	14%	0%	-15%	-5%	-1%

Table 2.1: Composition of bank balance sheets (1922-34)

Note: All figures are million pesetas and year averages, except 1922, which is end of year. Source: *Boletines del Consejo Superior Bancario*.

This mechanism of indirect monetization has been documented before; both contemporary observers and recent research have discussed its origins and functioning (Paret, 1921; Comisión del Patrón Oro, 1929; Olariaga, 1946; Pedrós Abelló, 1978), while more quantitative approaches using time-series analysis have focused on its implications for the evolution of monetary aggregates (Sabaté, Gadea, and

Escario, 2006, 2015), already suggesting a regime of "fiscal dominance". By drawing on a newly collected and assembled database of all Spanish banks during the period 1922q4-1934q4 at quarterly frequency, this chapter analyses the consequences of the aforementioned mechanism for the effectiveness of monetary policy implemented by the Banco de España (BdE). Bank-quarter-level data allows me to show, empirically, how this mechanism of fiscal dominance in the form of indirect monetization of public debt by commercial banks rendered monetary policy ineffective. In particular, I argue that price signals provided by changes in the interest rates from the BdE were ineffective in impacting domestic credit, which boomed from 1927. Both the BdE and commercial banks became passive but crucial elements of the time-inconsistency problem of Spanish governments.

In order to document the channels through which Spanish monetary authorities lost control of monetary policy (to fiscal authorities), I estimate a dynamic panel data model in which I analyse the effects of changes in the BdE rates on bank lending. Similarly to the Federal Reserve Act of 1913, the 1921 Banking Law created the *Consejo Superior Bancario* (Supreme Banking Council), which divided the Spanish banking system into two types of banks: those who had access to the discount window of the BdE and those who didn't (members and non-members). Because of this clear cut division, the data I collect allows for an estimation of the differential reaction to the changes in BdE interest rates for the two types of banks after controlling for a number of bank characteristics and dynamics of the real economy. I follow the standard literature on the transmission of monetary policy and find that banks that could count on the liquidity backstop provided by the BdE on government bonds were not reactive to changes in the monetary policy stance; they continued to lend regardless of rate changes. I also document the specific link between banks' holdings of public debt and the extent to which this affected the effectiveness of changes in the discount rate, the main policy tool with which the BdE–according to its Statute–was expected to manage the evolution of credit[24]. This confirms contemporaries' concerns that the 1921 Banking Law worked well as a solution for the fiscal needs of present and future governments, as well as to increase the interaction between the BdE and the rest of the banking sector, but that the monetization mechanism it created would eventually reveal incompatible with exchange rate stability.

Between 1928 and 1931, with the peseta falling rapidly, the time-inconsistency problem of the Government revealed the weakness of the discount rate of the

BdE as a tool to control the evolution of credit. This pushed the Government to resort to foreign exchange interventions in order to stop the fall of the peseta (Martín-Aceña, Martínez-Ruiz, and Nogués-Marco, 2013). In fact, as I discuss in Chapter 3, these interventions, which consisted in the Government first and then the banking sector borrowing abroad at short term maturities and in gold-convertible currencies, failed repeatedly. As a result of the debt monetization framework institutionalized by the 1921 Banking Law, the Government implemented policies to stop the depreciation with one hand, while with the other it continued to run deficits that only contributed to fuel an ongoing bank lending boom. This explains why, despite repeated attempts and rhetorical allusions to an eventual return to gold convertibility, Spain was unable to stabilize the exchange rate during the late 1920s. Quite tellingly, in 1930, the Bank of England sent a questionnaire to the Banco de España in order to learn about the exchange rate stabilization strategy that Spanish monetary authorities were pursuing. In a section called "Currency (notes, gold and silver)", the Bank asked[25]: *"Is it a fact that some kinds of Treasury Bonds change hands in the manner of bank notes? If so, is this not a form of inflation? Can an estimate be formed of the extent to which this is practiced? What measures would be necessary to put a stop to the practice?"*. While I have not been able to find the reply from the Banco de España, this chapter addresses some of these questions.

The rest of the chapter is organized as follows. Section II provides the historical background and discusses the origins and the contents of the 1921 Banking Law. Section III shows how the money market changed following the banking reform. Section IV describes the empirical approach; Section V discusses the data collected and used and Section VI provides the results of the empirical estimation. Section VII concludes.

2.2 Historical background

Due to Spain's neutrality during the First World War, external demand for Spanish goods boomed as European belligerent countries reallocated resources and demanded imports. Following the sharp improvement of its current account, the country experienced the largest gold inflow since the years of the Spanish Empire at the same time that virtually all its external debt was repatriated (Comín, 2012). The consequences of Spanish neutrality can be seen in the evolution of the trade balance. Since the 1890s, Spain's export capacity had been decreasing; the

impact of the First World War constituted a parenthesis in this trend. After an initial shock to Spain's import capacity in 1914, exports expanded rapidly and the country accumulated historically large current account surpluses as neighboring belligerent countries (mainly France) concentrated their industrial efforts, labor and capital into war-related activities (Tena, 2005). Trade surplus reached its maximum in 1919. Then, with the end of the war came the reversal of these dynamics. Exports started falling in 1920, to collapse in 1921; in turn, imports boomed in 1920, as a latent demand for foreign products began to be satisfied. Despite imports receded after this post-war surge, trade deficits continued throughout the 1920s (Figure 2.2).

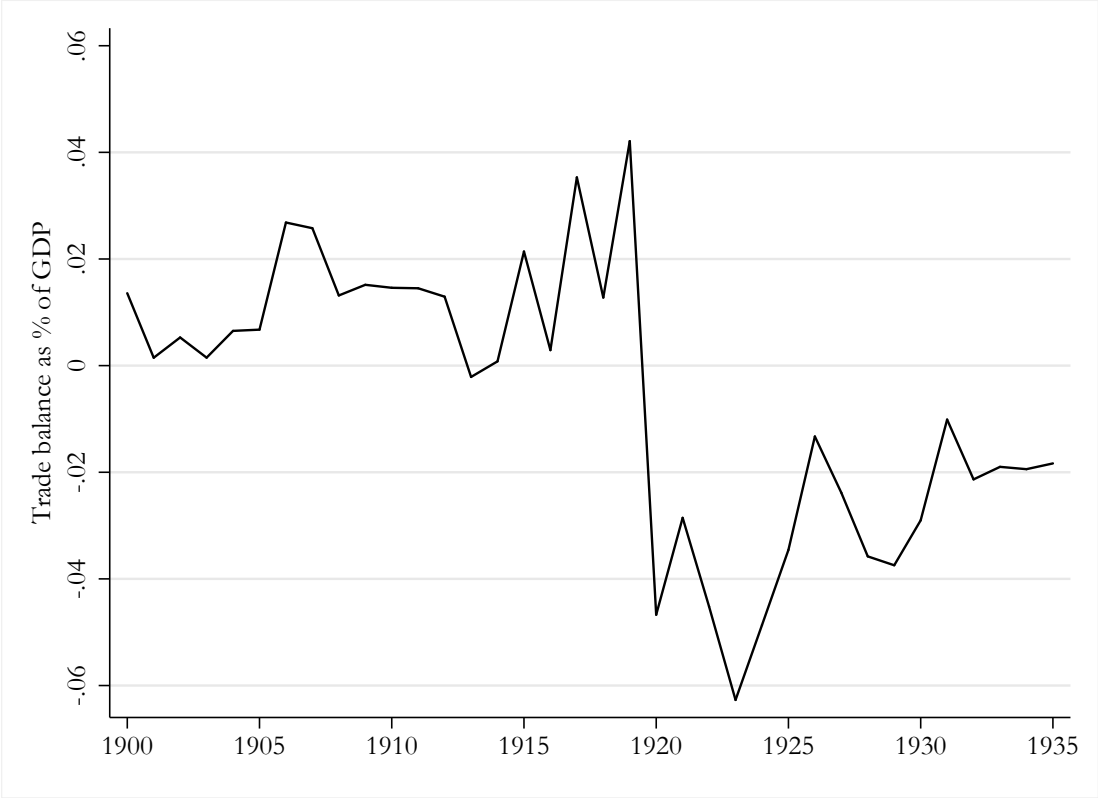


Figure 2.2: Trade balance as % of GDP, 1900-1935

Source: (Tena, 2005).

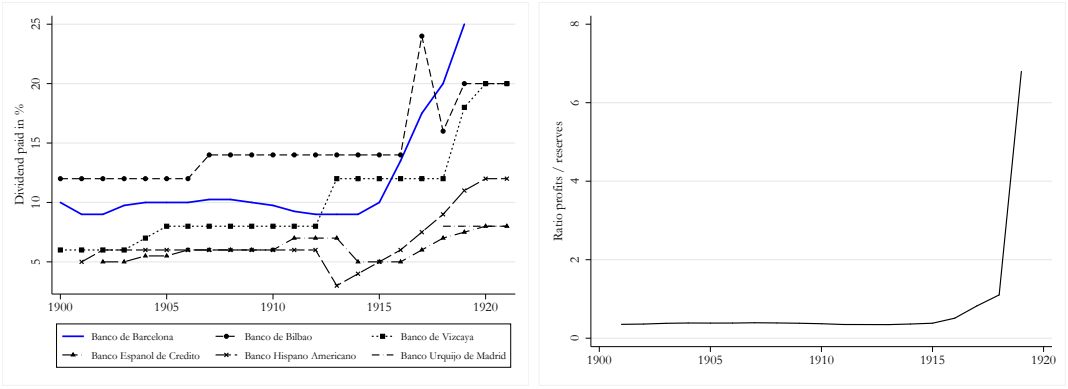
The improvements in the current account balance during the war caused a strong appreciation of the peseta, particularly against the French Franc and the Pound Sterling. This caused the peseta to trade above the gold-parity that was established in 1868 (and abandoned in 1883) of 25.22 pesetas per Sterling. Facing this favourable context, the BdE embarked in large purchases of gold, thus causing a concomitant increase in the monetary base (Martínez Mendez, 2005).

Most of the gold was purchased in US dollars, especially in 1917, the year when the largest gold purchase took place (Figure 3.6). Since both the French Franc and the Pound Sterling remained substantially overvalued in New York, the BdE issued pesetas to acquire the surpluses accumulated in these currencies and used the latter to buy undervalued gold (US dollars) in New York. This lasted until late 1917, when the US Government started limiting gold exports (Sudrià, 1990). By the end of that year, the gold reserve of the BdE had increased from 710 million gold-pesetas (at the 1868 parity) to 2055 million (Martín-Aceña, 1985). During the two following years, gold purchases by the BdE continued at a slower pace but the BdE ended up holding the fourth largest gold reserve in the world (League of Nations, 1925-37).

The end of the war caused a sharp reversal to the war-time bonanza. Alongside the real expansion of the economy, the banking sector had also experienced rapid growth. Banks had grown their regional networks during and after the War, and a number of new institutions had been founded (Tortella and Palafox, 1984; Martín-Aceña, 1984, 2005). On the intensive front, banks contributed to finance the war boom by expanding their supply of financial services. On the extensive front, banks started to develop a branch network throughout the country in order to capture new deposits and compete with the branches of the Banco de España, mostly for short term commercial credit (Paris Eguilaz, 1947; Velarde, 1968; Martín-Aceña, 1984; Pueyo, 2006). The expansion of the banking sector brought about a change in the composition of the money supply. As Martín-Aceña (1985) put it[26]:

> *"(...) as a result of this change in the composition* [of the money supply] *monetary authorities lost a large part of the direct control they had over the money supply until then. If monetary authorities wanted to regulate the money market, they had to take care not only of their own consolidated balance sheet, but to exert a tighter control over the evolution of the liabilities of the banking sector."*

As the following subsections show, this challenge and the need of a banking reform were evidenced by the failure of the Banc de Barcelona in 1920. The reaction of Spanish legislators was fast; Spanish policymakers began to discuss a new banking law, which came into being in the last days of 1921.



(a) Dividends paid (in %) (b) Profits over new reserves

Figure 2.3: The expansion of the Banc de Barcelona, 1900-1922

Source: *Anuario Garciceballos* (1900-1918) and *Anuario Financiero del Banco de Vizcaya (1919-1921).*

2.2.1 Liquidity and solvency: the 1920 banking crisis

On the Christmas Day of 1920, after 76 years of history, the Banc de Barcelona (BB) suspended payments. Albeit the crisis had almost no effect on the aggregate real economy, the failure of the Banc de Barcelona became the worst financial episode the country experienced in the first decades of the 20th Century (Betrán, Martín-Aceña, and Pons, 2012). It was, and in fact is, a hotly debated episode in the Spanish political and economic historiography[27].

Unable to overcome the effects of the international post-war deflation, the situation of the BB deteriorated rapidly and the bank became insolvent (Blasco and Sudrià, 2016). The bank had pursued two unsustainable strategies during the trade boom that Spain experienced between 1914 and 1919. As other banks in Spain, the BB generated abnormal profits during the War (Figure 2.3). However, the BB pursued a much more aggressive expansion strategy. Figure 2.3a shows the evolution of the main Spanish banks' dividends between 1900 and 1922. As can be seen, all banks increased their dividend payments during the boom, but the Banc de Barcelona stands out from the rest, especially compared to its pre-war dividend policy. In parallel, the bank cut drastically the proportions of annual profits that were added to its reserves (Figure 2.3b).

Blasco and Sudrià (2016) documented the collapse of the bank in detail. In the last days of December 1920, depositors ran on the bank as news about large losses became public. The bank resorted to the BdE and the Government, and while both were initially willing to help, the bank failed, as it had no more as-

sets that could be offered as collateral. Relying on detailed archival evidence, these authors show that the bank run was the consequence of the weaknesses of the bank, rather than the cause[28]. During the war, the bank had extended loans for which it accepted commodities as collateral, valued at war prices. When the sharp recession and deflation started after the war and exporters and other debtors started defaulting on their loans, the bank was left with highly depreciated collateral.

During the expansion of business that the War brought about, some of the bank's managers embarked in risky lending operations with a handful of individual foreign borrowers that moved to Barcelona attracted by the boom the city was experiencing. Moreover, the bank had invested in German Marks during the war, in the expectation that Germany would return to its pre-war gold parity once the war was over. Albeit the Mark appreciated somewhat during the summer of 1920, it started falling rapidly again from September onwards, in a process that culminated in the well-known German hyperinflation (Sargent, 1982; Balderston, 1989; Eichengreen, 1992). This policy of aggressive expansion was not followed with improvements in the management or the internal control on lending standards. The same members of the board that had managed the bank during the *easy* pre-war years were kept in managerial and executive positions, and embarked in operations for which they did not have sufficient knowledge. This led to an uncontrolled expansion of the bank and to excessive risk-taking. As Blasco and Sudrià (2016) concluded, a combination of mismanagement and excessive expansion left the bank insolvent.

The interpretation of the crisis by contemporaries was different, especially among some members of the executive, which did not agree in that the bank failed for insolvency issues; instead, it was considered that the bank would have survived if it had received *more* assistance from the Banco de España, or the Government[29]. Among them was Mr. Francesc Cambó, who was appointed Minster of Finance in August 1921. Cambó did not fail to acknowledged the mismanagement problems within the bank's organization and their role in the bank's failure[30]:

> *"Until the War erupted, the Banco de Barcelona was a bank surrounded by an almost century-old prestige; but I must say that the actions of the bank, even if very profitable for its shareholders, as it*

> *provided very good dividends, were null for trade, industry and the public interest. (...) Lending against commodities is risky and when, not in years or months, but in weeks commodity prices fall by more than two or three times the most conservative predictions, a bank that is largely invested in these operations can undergo severe distress. (...) all large commercial banks in the world have suffered from this problem, and if they survived (...) it's because of the extraordinary assistance they received from the issuing bank or the State."*

However, he still considered that the failure of the bank ought to have been avoided by the provision of assistance from the Government and the BdE. Accordingly, he stressed the importance of improving banks' access to a liquidity backstop in moments of financial distress and to a more *elastic* currency during normal times. Although the BdE had acted as lender of last resort before, it had been usually at its own discretion (see Chapter 4). This discretion was, according to Mr. Cambó, the product of a fragmented banking system in which the central bank was disconnected from and competed with the rest of the banking system; a rule was needed. Accordingly, the importance of the BdE's role as "banks' bank" would be stressed in the preamble of the law that was passed in 1921, and which embodied the institutional response to the 1920 banking crisis[31]:

> *"In a credit system, the issuing bank has to be the rearguard, a very firm position that is not subject to convulsions, keeping always the necessary firmness to be able to assist the banks, which in turn need a higher elasticity to be able to attend the needs and changing nature of the nation's economic life."*

2.2.2 The legislative reaction to the crisis and the reaction to the new law

In October 1921, while the reasons underlying the failure of the Banc de Barcelona were still under official investigation (this only ended in 1923), the Minister of Finance presented a project to the Parliament for a Banking Law[32]. A key element of the reform was the speed at which it was passed. The Minister rushed the passing of the law arguing that the monopoly of issuing that had been granted to the BdE would expire on the 31st of December. As I discuss below, this was highly criticized by contemporaries as a way for the Government to ensure that the law

could be pushed forward without a proper parliamentary debate or an external evaluation of the actual causes of the 1920 banking crisis. Crucially, critiques of the speed at which the law was passed also pointed out that the Government was including a mechanism through which its public debt could be monetized by banks, especially considering the large debt issuance that the former had to make sure was successful (Figure 2.1). Moreover, contemporaries also acknowledged the fact that the BdE could have been given a temporary extension of the monopoly of issuing that would have allowed for a more thorough discussion of the law.

A second key element of the reform was that it had to take into account the interests of the Government, the Banco de España and the banking sector at once. The reform had to achieve the integration of the Spanish national banking system by bringing both the BdE and the rest of the banking sector together into one single, joint negotiation with the Government. The Minister of Finance was convinced that in order to strengthen the Spanish banking system, interaction between the BdE and banks had to be increased. Reflecting the overall nationalist approach to economic development of the period (García Delgado, 1985; Florensa, 1979; Velarde, 1968), the reform also sought to protect the Spanish banking sector from foreign competition, as claims of a foreign "invasion" dominated the public discourse at the time[33]. As García Ruiz (2001) documented, claims against an "invasion" from foreign banks were clearly exaggerated. The rapid increase in the number of foreign bank offices in Spain between 1914 and 1920 triggered this reaction against non-Spanish financial institutions. However, when Cambó presented the 1921 Banking Law project, foreign banks were already finding it difficult to expand in Spain. They were more heavily taxed than Spanish banks–something that the 1921 Law did not change–and were excluded from the clearinghouse system that was introduced in 1923 (Pons, 1999).

As discussed above, the timing of the parliamentary discussion of the reform and the passing of the law was subject to strong criticisms. First, while the monopoly of issuing was about to expire, and in theory this pushed for a fast reform, it was very unlikely that the BdE would not see its charter renewed. The monopoly of issuing had been in place since 1874, and the BdE had extended the use of the paper, inconvertible peseta and financial services across the Spanish territory since the last years of the 19th century (Tortella, 1970; Castañeda, 2001). Thinking about a national monetary authority that could perform the

same duties without causing the collapse of the payments system was not an option. While the Minister argued that this reduced his scope for real negotiation in one of the crucial points at the time–the profits of the BdE–contemporaries argued that there was an easy solution for that; the Government just had to issue a Decree to extend the monopoly of issuing until the law was discussed in full. The Minister of Finance responded that there was no room for action[34].

The Minister went on to discuss other challenges he faced. Mr. Cambó highlighted that the expiration of the monopoly of issuing opened the door to reform the BdE but that banks would only accept to be regulated if the BdE was reformed first. The question raised by the Minister, then, was how to induce two so-far competing actors to cooperate. The argument was that banks had grown so disconnected from the BdE, under a spirit of "*exaggerated individualism*" and *"anarchy"* that they would only accept to be brought under a common regulatory framework if a compensation was provided. Pushing this argument, Cambó sought to reform the whole banking system at once[35]:

> *"(...) the Banco* [de España] *will only accept the impositions to its structure and its habits enforced by law if they are conducive to an improvement and modernization of the current situation when the Parliament will have full sovereignty to decide over the extension of the privilege of holding the monopoly of issuing. (...) Regarding private banks (...) the only way to bring them under new regulation without affecting their habits, is to offer them a compensation, and this can only be provided after the structure of the BdE is reformed, and for this, the right moment is given by the expiration of the monopoly of issuing."*

To be sure, the compensation that would be given to banks for "inducing" them to hold public debt and to park it with the BdE could not come from an erosion in the profits of the BdE; new regulation had to take into account the BdE's ability to keep paying stable dividends to its shareholders[36]:

> *"Putting in place a regime that prevents the hopes of the Banco's shareholders from keeping their dividends (...) apart from causing distortions in public credit, it would have had all the characteristics of a pillage (...) I should make it clear that this law draft does not reflect my ideas or my convictions; it is an adaptation of the latter to the*

reality on which I had to act and on which the Spanish Parliament has to decide."

Another pressing issue was how to manage currency issuing in a regime of gold-inconvertible currency. The law would keep the total amount of pesetas in circulation within limits established by metallic reserves at the BdE and, for the uncovered issuing, within a quantitative ceiling that would be increased only after an *ad hoc* negotiation between the Government and the BdE. This option was preferred over a fixed proportionality rule between metallic reserves and notes, because it would grant the Government the chance to negotiate the terms of the rule with the Banco when notes reached the limit (in case this happened before 1946, when the new monopoly expired)[37].

Finally, and crucially, the Minister addressed the future of the exchange rate of the peseta. A return to the Gold Standard had been discarded during the War, when the Spanish currency was trading above the 1868 parity. By the end of 1918, the peseta traded at 20 pesetas per Sterling, a 25% above the 1868 parity. However, as the Spanish trade boom came to an end, the peseta started falling again, and by the time the law was being discussed, the peseta was again trading around 10% below the 1868 parity. In sight of this, and not inclined to impose more deflation to the Spanish economy, the Minister anticipated that Spain would be operating a gold-inconvertible currency during the following years. The fact that Spain was not going to join the Gold Standard in the very short run, however, did not exempt the country from seeking a stable currency (and from actually committing to establish gold convertibility as late as in 1930, as I document in Chapter 3).[38] The country should have a strategy to maintain exchange rate stability[39]:

"Two factors affect the external value of a currency. The trade balance is one (...) Internally, when fiduciary inflation happens, when paper money is created, (...) because of the law of supply and demand, the currency depreciates internally and externally. From the two causes, the first can not be solved by this Law. (...) The second, however, can be fixed by avoiding fiduciary inflation. And the one that can prevent this is the one that causes it, and it is always the State."

The Minister of Finance was aware that the virtue of the law that was being discussed hinged on the way it dealt with the fiscal needs of future governments[40].

Expanding fiscal expenditures without a concomitant increase in revenue would increase the likelihood that the BdE was induced to monetize some of the debt, inevitably contributing to the depreciation of the peseta. The Minister went on to discuss how exchange rate stability could be achieved:

> *"There are two weapons to influence the external value of a currency, to be able to control the exchange rate. One is a good discount policy. The discounts of the issuing bank end up conditioning the interest rates in the country. It is evident that an increase in the discount rate can keep the depreciation of the currency. (...) This law does not deal with discount policy directly, but indirectly it has been understood that everything that could be done has been done, in order to ensure that the discount will be determined in Spain, responding only to the interests of the Spanish economy.* [In reference to a second weapon], *using gold to defend the depreciation of the currency is something that had to be done with extreme prudence. When a country does not have in fiduciary inflation the fundamental cause of the depreciation and its trade balance is only temporarily in disequilibrium, moving gold can help stabilize the currency; but when the causes of the depreciation are the permanent deficits on its trade balance, using gold can be catastrophic."*

To be able to deal with an eventual depreciation of the peseta, monetary authorities would have to be ready to use interest rates, as this was though to be the most effective tool against exchange rate depreciation. The Law, as Cambó acknowledged, had a weakness in that the the discount rate was expected to be the main "weapon" against exchange rate depreciation, but at the same time, it failed to establish any specific rule that linked discount (rate) policy with exchange rate stability. While this was indeed a weakness of the Law, because it did not place responsibility about exchange rate stability neither with the Government nor with the BdE, this was not the main weakness. More importantly, changes in the BdE rates would only work to curb an eventual depreciation of the peseta if they could have an effect on the supply of credit. However, this transmission channel could not be at work if banks could monetize government deficits with the BdE. Unsurprisingly, when this link between BdE rates and the exchange rate was needed from 1928 onwards, it revealed as extremely weak.

2.2.3 The 1921 Banking Law

The final version of the law was passed on 29 December 1921, two days before the monopoly of issuing expired. The Law had two parts. The first dealt with the Banco de España, while the second dealt with the rest of the banking system through the creation of the *Consejo Superior Bancario* (CSB), a regulatory body to which banks could voluntarily choose to adhere.

The Banco de España

The law dealt with a number of questions regarding the BdE. Here I discuss Sections 7 and 8 of Article 1, which are the most relevant for the argument. Section 7 dealt with the eventual need to intervene in foreign exchange markets to stabilize the peseta. This section contemplated, not a systematic intervention in foreign exchange markets to stabilize the peseta, but rather an eventual need to intervene. Therefore, the law did not include any commitment from the BdE or the Government to control exchange rate fluctuations. Instead, it was stated that if the foreign exchange situation required a stabilization intervention, the initiative would have to be taken by the Government. If the BdE agreed in the stabilization plans suggested by the Government, then the former could contribute to these plans with its own resources (its gold reserve). The intervention would be financed 50% by the Government and 50% by the BdE, and so would be any profits or losses resulting from the interventions[41]. On the one hand, the BdE held the fourth largest gold reserve in the world at the time, which made it the institution that was better equipped to defend the exchange rate. On the other, the law made it clear that only if the BdE agreed with the Government it could be then asked for intervention. This shows the bargaining power of the BdE during the negotiation of the law. With this clause, the BdE managed to avoid having to internalize the eventual costs of a time inconsistency problem, namely that a future government could pursue a *too* expansionary fiscal policy funded by issuing debt causing the peseta to fall, and then forcing the BdE to use its gold reserve to defend the exchange rate. If government debt followed a path that the BdE considered inconsistent with exchange rate stability (as happened in the second half of the 1920s), the latter could just decline any proposition for a stabilization plan.[42] However, no specific metric was defined; neither on what was considered exchange rate stability nor on how much fiscal deficit was acceptable. In practice, therefore, exchange rate management fell into a legal void in which no specific institution was given a specific mandate about it.

Section 8 introduced a reduction in the Discount and Lombard rates that CSB member banks would enjoy when accessing the discount window of the BdE[43]. Although a reduction on the discount rate had been contemplated by a law drafted in 1918, this was optional for the BdE and it was not introduced as compulsory until the 1921 Banking Law[44]. An important nuance of Section 8 was that, while the decision to rediscount a bill of exchange was ultimately at the discretion of the BdE[45], the latter could not reject CSB member banks' operations using public debt as collateral. This implied that, once the Law was passed the BdE had to be ready to interact with all CSB members, at least, through advances against public debt, while its portfolio of discounters of bills of exchange remained virtually unchanged[46]. The Government also introduced the obligation for banks to hold at least 20% of the public debt they subscribed on their balance sheets, thus directly introducing an element of financial repression in the negotiation (Sabaté et al., 2006).

The discount rate charged to CSB members was reduced by 1.0% vis-à-vis other private clients, unless the official rate was below 5.0%, in which case the reduction was of 0.2% (the official rate never fell below 5.0% so the reduction was always 1.0%). This sought to progressively withdraw the BdE from private discounting by providing the public an incentive to discount bills with banks. Advances against public debt were also granted a reduction. This one, however, was not constant and predetermined. The Law opened the possibility for different Lombard rates applying to different types of Government bonds (and also to private stocks). The Lombard rate on Government bonds could be decided between the BdE, the CSB and the Minister of Finance whenever new issuances of public debt took place. This meant that while there was a "normal times" rate for advances against public debt, in the event that the Government was in need of issuing more debt than the market was willing to take, it could avoid paying higher yields by setting a specific lower rate for advances. Importantly, this type of operation differed from modern-day repurchase operations (repo) in that the bank in question did not sell the bonds to the BdE, as the latter was forbidden to buy them both in the primary and the secondary market. Instead, banks pledged the asset as collateral, which meant that, while the asset was with the BdE and a given bank had obtained liquidity to create deposits and loans, the yield from the asset pledged continued to accrue to the bank. In a way, this scheme resembled the recent Long Term Refinancing Operations (LTROs) introduced by the

European Central Bank, in which the latter did not buy public bonds, but lent to banks at low rates against public debt as collateral. This specific part of Section 8 was highly controversial, as it was an essential part of the time-inconsistency problem the Government was incurring into. In sum, the rate at which CSB banks could monetize their public debt holdings at the BdE was already below the yield to maturity (YTM) of that public debt but, in addition, this rate could be further lowered for specific issuances if the Government needed to do so.

Three weeks before the Law was passed, a group of parliamentarians presented a proposal to amend Section 8, focusing precisely on the Government's right to change the Lombard rate for specific issuances of public debt depending on its fiscal needs[47]. The proposed amendment sought to limit the Government's ability to set specific rates for specific bond issuances, by removing from the text of the Law the clause that allowed the Government to negotiate these specific rates at its convenience with the banking sector and the BdE[48]. Despite the Minister of Finance was aware of the potential problems associated to the special treatment of public debt, the proposal of amendment was dismissed in the final text[49]. Instead, an additional line was kept in the text: a specific Lombard rate for new issuances of public debt could be renegotiated between banks (CSB), the BdE and the Government at any given moment.

The result of the Law in terms of interest rates and spreads is presented in Figure 2.4. Throughout the period the Lombard Rate was below the YTM of Government bonds. The figure shows different types of bonds, an average index of YTMs and the main rates of the BdE, the Discount Rate for bills, the Lombard rate for public debt, and a specific rate set for gold bonds in 1930. In addition, Figure 2.5 shows the spread between the YTM of government bonds and the Lombard rate for CSB members and non-members; that is, for those that had open access to the monetization of government bonds with the BdE and those who did not. The difference is clear; until late 1930, CSB banks enjoyed a positive spread, while non-members, in case they wanted to access the discount window of the BdE using public debt and the latter was willing to lend to them, would experience the inverse conditions than CSB members. This explains why non-members did not access the lending facilities of the BdE. Although there is no direct evidence, it is very likely that CSB members arbitraged out this differential access to the lending facilities of the BdE by lending to non-members at lower rates than the "shadow rates" the latter would have been charged at the

BdE.

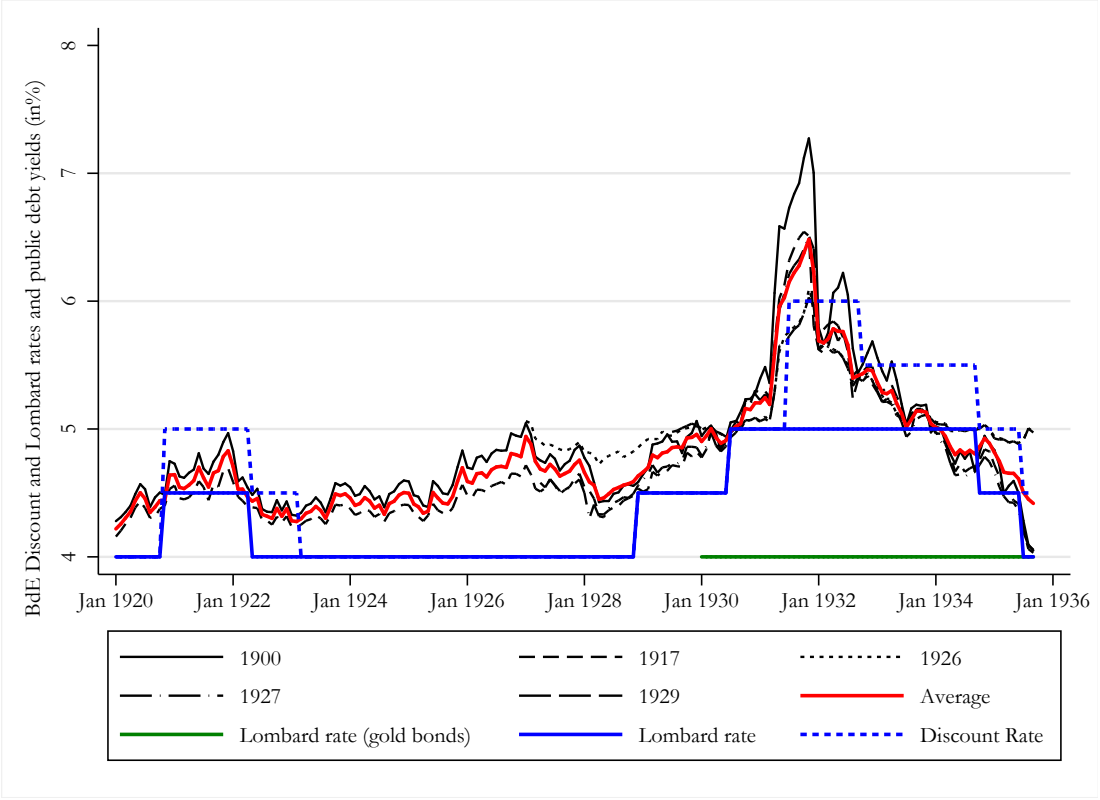


Figure 2.4: BdE rates and yield of public debt (YTM)

Note: red solid line is average yield of debts pledged at the discount window of the BdE. All public debt in the chart had a nominal yield of 5%. Blue solid line is discount rate and blue dashed line is Lombard rate. Green line is the Lombard rate for gold bonds. Source: for yields to maturity Martínez Mendez (2005); for rates, *Actas de Consejo del Banco de España*.

Table 2.2 shows the relative amounts of each type of government bond pledged at the BdE for a representative quarter in which concerns over the depreciation of the peseta were at their highest but during which banks were not under liquidity pressure from depositors and were extending loans (1931q1). The largest part of bank access to the discount window of the BdE through advances was done by pledging 5% government bonds. This is true for the whole period displayed in Figure 2.4. From 1930, however, there was also strong use of 6% gold bonds, precisely because the Government had set a specific (lower) Lombard rate for them. While I discuss this in more detail in Chapter 3, a brief explanation is due. Albeit they constitute a a unique case, gold bonds were the most notorious example of the scheme described above. In January 1930, in a last attempt to stop the fall of the peseta, the Government issued 350 million pesetas in gold bonds. These were issued at a yield of 6%, they carried taxation exemptions and were paid in gold or

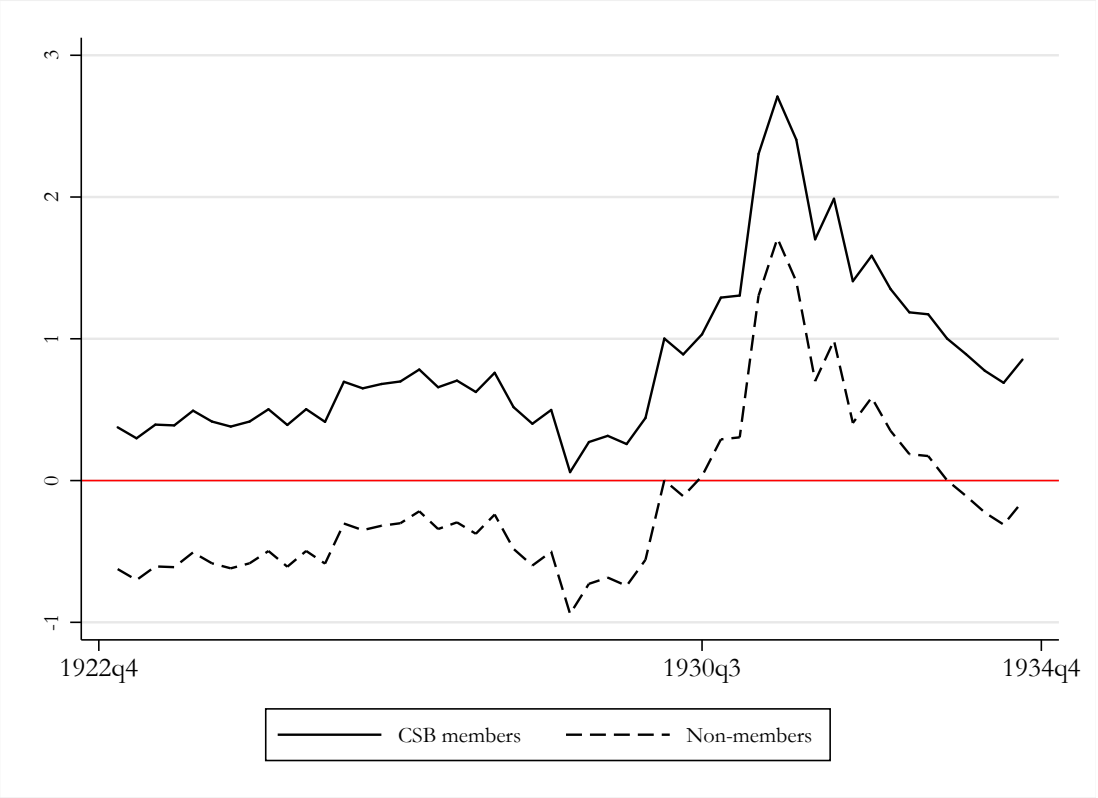


Figure 2.5: Spread between yield-to-maturity of public debt and Lombard rate, CSB members and non-members (1922q4-1934q4)

Source: own calculations using Martínez Mendez (2005).

gold-convertible currencies. More importantly. banks holding these bonds could pledge them at the BdE at a Lombard rate of 4% which had been specifically set for these bonds. Although the case of gold bonds was unique, it shows how the problem that contemporaries had highlighted during the discussion of the Law in 1921 did materialize, precisely when the conflict between government finance and exchange rate stability was at its highest. With one hand, the Government borrowed from banks to stabilize the peseta. With the other banks could use new issuances of Government bonds to borrow from the BdE and keep lending.

The banks

Article 2 of the 1921 Banking Law created a new institutional and regulatory framework for banks: the *Consejo Superior Bancario* (CSB) (Supreme Banking Council). Banks could voluntarily join the CSB. For this, they had to comply with liquidity and capital ratios. Banks also had to comply with upper limits in interest paid to depositors as well as commit to not discount bills in the market below

Nominal yield	% of advances
3% Public Debt	2.4%
4% Public Debt	1.9%
4% Railways Debt	11.4%
5% Public Debt	68.0%
6% Gold Bonds	16.3%

Table 2.2: Share of different types of Government bonds used as collateral by banks at the discount window of the BdE (1931q1)

Source: *Actas de la Comisión de Operaciones del Banco de España* for amounts pledged.

the BdE discount rates. The goal of the CSB was to create a uniform regulatory criteria for banking, so banks would be under the same discipline, and situations like the one the Banc de Barcelona underwent in 1920 would be avoided in the future. According to the Minister of Finance, the intention of turning the BdE into a "bank's bank" and withdrawing it from the retail business was inspired by the Banque de France, albeit this is difficult to reconcile with the fact that the Banque kept a substantial commercial business until well after WWII. In practice, the establishment of the CSB as a group of banks that, subject to a certain regulation were granted with access to the discount window of the central bank, was more reminiscent of the 1913 Federal Reserve Act (Meltzer, 2003; Mitchener and Richardson, 2013; Calomiris, Jaremski, Park, and Richardson, 2015).

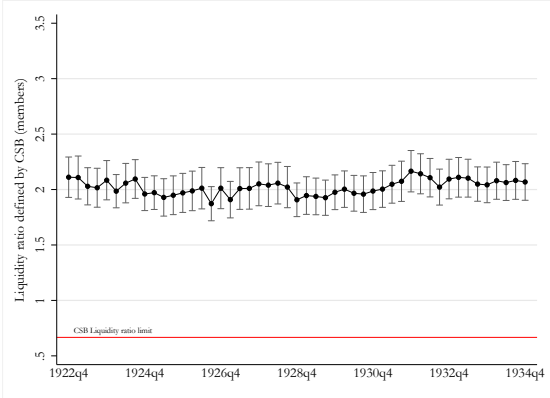
Minimum liquidity and capital ratios were decided by the CSB, and were remarkably lax[50]. As Artola-Blanco (2016) highlighted, the liquidity rule was never officially published, so it is very likely that it was never enforced; bank-level evidence suggests that it was, at best, meaningless. The liquidity rule asked CSB banks to maintain a proportion of two-thirds between their short term liquid assets (*activo realizable*) and their short term liabilities (*pasivo exigible*). Liquid assets, under the CSB definition, included: cash and deposits at the BdE, foreign exchange in cash, interbank loans, 3-month bills of exchange, public debt (at 90% of their value), stocks (at 80% of their value), collateralized loans, call loans and loans in foreign exchange[51]. In short, everything except long term (uncollateralized) loans was included in the liquidity ratio. In turn, short term liabilities included: sight deposits (current accounts), deposits in foreign exchange, interbank deposits and the share of time deposits that could be withdrawn with a less than eight day notice. Minimum capital ratios were also defined[52]. Disbursed capital, reserves and 50% of the non disbursed capital had to add up to no less than 10% of banks' deposits. If, for exceptional circumstances, banks exceeded

the liquidity and capitalisation limits, they had to submit the case to the CSB for evaluation, which would consider if a penalty applied.

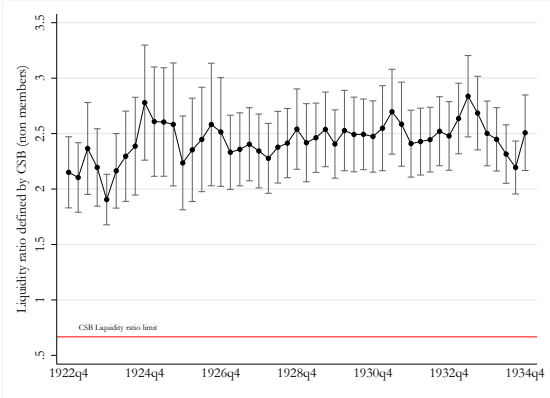
Figure 2.6 shows the evolution of the liquidity ratios established by the CSB for member, non-member and foreign banks compared to the minimum limit (indicated by the horizontal line at 2/3). Given the laxity of the liquidity rule, it is not surprising that both CSB members and non members held similar ratios (Figures 2.6a and 2.6b). Foreign banks presented a different picture, mostly driven by their higher proportion of deposits in foreign exchange with respect to the other two types of short term liabilities computed in the ratio (sight deposits, interbank deposits and less than 8-day deposits) (Figure 2.6c). While Spanish banks held, on average, less than 10% of deposits in foreign currency around the moment when the 1921 Banking Law was passed, foreign banks held more than 30%. However, even taking this into account, foreign banks were also comfortably above the minimum liquidity requirement. Figure 2.6 suggests, therefore, that the regulatory requirements for banks did not seem to involve a strong readjustment of their portfolio.

A similar picture emerges when comparing banks' capital ratios. Given the data at hand, which does not allow for distinguishing between disbursed and non-disbursed capital, it is not possible to calculate the CSB capital ratios for all banks. However, an approximation can be done by comparing a standard capital ratio, which includes capital and reserves as a percentage of total assets (Figure 2.7). Again, there seems to be no positive relation between CSB membership and capital ratios. Rather the contrary, non members held higher capital ratios than CSB members (Figures 2.7a and 2.7b). Although CSB members had very high capital ratios–on the vicinity of 30% of assets–compared to other countries[53], the difference between both groups makes sense if we consider that non-members had no access to the facilities that the 1921 Banking Law established for member banks when accessing the discount window of the BdE and the fact that they were, on average, much smaller banks[54].

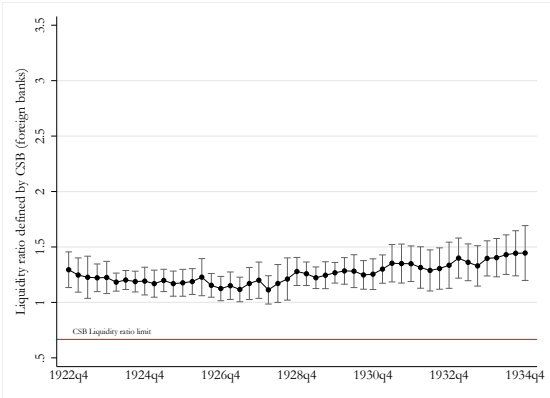
In exchange for these liquidity and solvency rules, banks that joined the CSB would be granted with two benefits. First, they could rediscount bills of exchange with the BdE at 1.0% lower than the official rate, provided that the BdE would consider them eligible. Interestingly, and in order to ensure banks would have an incentive to rediscount their bills with the BdE, the new regulation also estab-



(a) Members



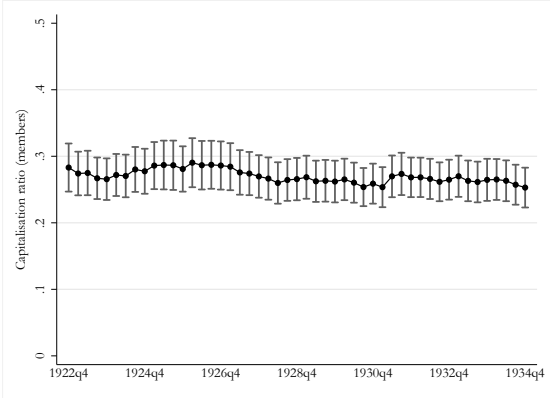
(b) Non-members



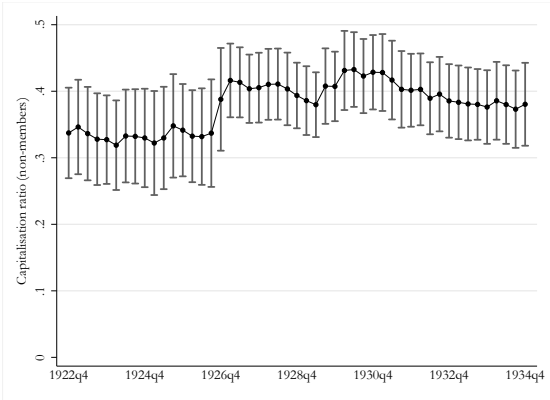
(c) Foreign banks

Figure 2.6: Liquidity ratios established by the CSB, 1922-1934

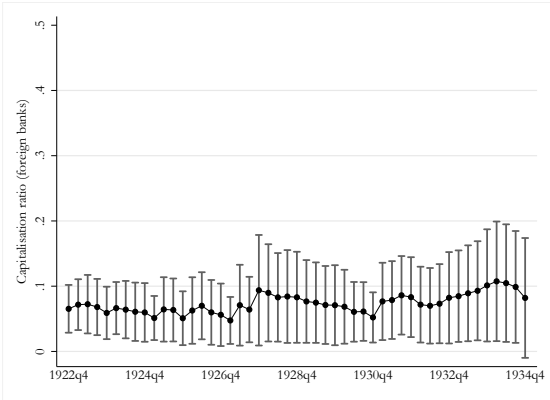
Note: for details on the ratio, see text. Line is unweighted average with 95% confidence intervals. Source: *Boletines del Consejo Superior Bancario*.



(a) Members



(b) Non-members

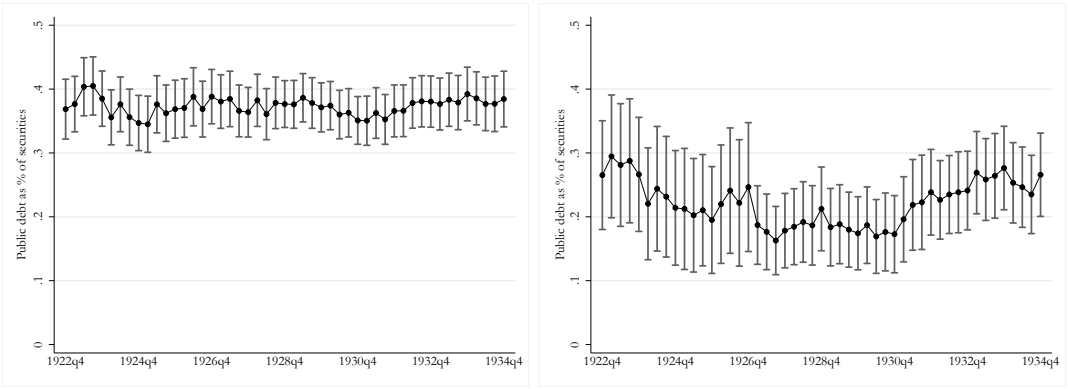


(c) Foreign banks

Figure 2.7: Capital ratios, 1922-1934

Note: for details on the calculation of the ratio see text. Line is unweighted average with 95% confidence intervals. Source: *Boletines del Consejo Superior Bancario*.

lished that banks could not discount bills to firms and individuals below the BdE official rate[55]. This restriction contributed, to a large extent, to isolate the BdE's profits from competition. Second, all CSB banks could obtain advances from the BdE by pledging public debt. As stressed above, the important part of this second element was that, while the BdE still held some discretionary room for eligibility when rediscounting bills (some of the largest and most widely branched commercial banks in Spain did very rarely rediscount a bill with the BdE and the latter never rediscounted a bill to non-CSB members), it was obliged to grant CSB banks with advances against public debt insofar as they abode by the liquidity and capital ratios. Unsurprisingly, the result of this asymmetric discount window lending policy is reflected in banks' portfolio composition: CSB members held larger portfolios of public debt than non-members (Figures 2.8a and 2.8b).



(a) Members (b) Non-members

Figure 2.8: Public debt as % of securities portfolio

Note: line is unweighted average with 95% confidence intervals. Source: *Boletines del Consejo Superior Bancario*.

2.2.4 Contemporary critiques to the 1921 Banking Law

During the two months in which the law was discussed in the Parliament, members of the opposition criticized the Minister of Finance for having rushed the reform in order to ensure that the Treasury would find a way to finance its deficits, even if this was through indirect monetization. More precisely, the critique revolved around the incompatibility of the Law with controlling the fluctuations of the peseta. The day after the aforementioned amendment to Section 8 was presented, its proponent, Mr. Gregorio Balparda[56], lamented that the Minister had disregarded his proposition to amend the law, and stressed that this would

leave Spanish monetary institutions unable to stabilize the exchange rate when needed[57]:

> *" (...) this law has turned out to be a project in order to facilitate the operations of the Treasury (...) and Mr. Cambó knows that the increase in the amounts in circulation cause the increase in the value of all things, raise prices, increase banks' current accounts (...) In sum, the Banking Law is an extraordinary danger, an obvious peril to the national economy; its consequences will be the the fall of the peseta (...) and economic and monetary disorder. With respect to the banks, it will not regulate them, but will enthrone the financial oligarchy."*

Similarly, Mr. Juan Alvarado, former Minister of Finance during 1909 and 1910 summarized the critique[58]:

> *"(...) from the two main functions that issuing banks have as providers of credit and regulators of circulation, the Banco de España will just be able to conduct the first, because given the structure of the Law, there are excessive facilities to an unconsidered increase in fiduciary circulation. (...) Another important question that demonstrates that we will move towards excessive increases in circulation is the composition of the Board of the Banco. All the new members that are brought to the Board are interested in increasing credit; they are interested in issuing more and more notes; there is none with a contrary interest; they will all try to get as much credit as possible for those who they represent (...)."*

Mr. Alvarado went on to criticise the speed at which the Law was being pushed for debate[59]:

> *"What will happen if on the 31 of December the Senate has not approved the Banking Law? Is the Minister scared that the Banco de España will not be willing to continue to hold the monopoly of issuing and rediscount? Forget about this, because there is nothing to fear. With a Decree from the Minister of Finance that extends the current law for a month or two, the Banco will continue to enjoy the great benefits it enjoys today. Nothing will happen. But what could cause great damage is that the law is passed too fast, without deep study and*

> *giving the country the impression that we are not dealing properly with such a crucial issue as the Banking Law."*

Criticism did not remain in the Parliamentary domain. Contemporary economists also argued that the Banking Law perpetuated a system in which monetary authorities would lose control over the evolution of credit and, subsequently, on the exchange rate. In a book published right after the Law was passed, Paret (1921) criticized the ties between the Government and the BdE, which were now protected by the Section 8 of the Banking Law[60]:

> *"(...) only with the complete independence from politics it* [the BdE] *can provide the services that such an institution ought to provide. The area in which this freedom needs to be more clear is in the determination of interest and discount rates (...) The Lombard rate should not be arbitrary, because fatal consequences for the country can derive from its level. In Spain, from the imposition of Ministries of Finance, and not rejected by the BdE, the Lombard rate has almost constantly been below–sometimes much below–the net yield of public debt, (...) this has encouraged speculation and has created a false easiness for the State to issue debt, giving the profane public the feeling that money was abundant, and freeing Ministries of Finance from having to worry about finding alternative ways to finance the deficits. Such a regime can not continue if Spain wants to stop being a country that is constantly exposed to monetary and exchange rate perturbations. (...) This policy causes tremendous damage on the exchange rate."*

The law was also strongly criticised by Luis Olariaga, who by 1928 would find himself in charge of foreign exchange interventions to defend the peseta. In 1946, when discussing the monetary situation of the 1920s and 30s, Olariaga recognized that the 1921 Banking Law had failed to make the needed reforms to the Spanish monetary system. It is interesting to see how, writing in 1946, Olariaga completely dismissed the role of fiscal matters in the evolution of the peseta during the 1920s. Instead, Olariaga seemed to stress the reduction of discount rate to banks, but completely neglected the importance of public debt in banks' access to the discount window[61]:

> *"The 1921 Banking Law (...) should have normalized the structure and functioning of our issuing bank and put it in line with the standard of*

> *the banks of its kind. It failed to do so. (...) There was a lot of debate on turning the Banco into a bank of banks, and a reduction in the discount rate charged to banks was introduced, but everything was pure theory compared to the actual goal, and the effects of these reductions did not, and could not, discipline the Banco as the issuing institution."*

Recent research has also pointed to the conflict between fiscal and monetary policy. In line with the detailed description of this regime provided by Pedrós Abelló (1978), quantitatively-focused work has approached the study of this framework from an aggregate perspective. Using annual data for macroeconomic and monetary aggregates and implementing time-series analysis, Sabaté et al. (2006) and Sabaté et al. (2015) concluded that this implied an "indirect monetization" of public debt, and found evidence that put Spain into a regime of fiscal dominance, in which, in line with the fiscal theory of the price level, monetary policy ended up being determined ex-ante by fiscal deficits. Their view is not far from Martínez-Ruiz and Nogués-Marco (2017) argument that conflicting interests made it difficult for monetary authorities to fight the depreciation of the peseta and join the Gold Standard already before 1914. However, the crucial role of banks has not been yet addressed empirically. This is important because, through their creation of money, banks are the necessary channel for this indirect monetization scheme to take place[62]. In order to contribute to fill this gap, I now turn to analyse the effects of the 1921 Banking Law in the balance sheet of the Banco de España, the banking system and in the money market.

2.3 The impact of the 1921 Banking Law in the money market

As a result of the regulatory changes that took place after the fall of the Banc de Barcelona, the Spanish money market experienced some important changes, which made Spain diverge from the common practice in Europe. First, as a response to the 1921 Banking Law, the composition of the balance sheet of the BdE changed. A new set of counterparties needed a new lending policy. In parallel, eligibility criteria for collateral at the discount window of the BdE also changed.

Before the War, the BdE used to intervene in money markets through stand-

ing facility purchases of bills of exchange (i.e. rediscounting), as did most central banks at the time (Table 2.3). Spanish banks (as well as bankers and non-bank firms) accessed the discount window of the BdE using up-to-90-day bills which were either accepted by domestic banks or by international banks. Lombard operations (or advances) were much less used. A follower of the real bills doctrine, the BdE had been historically concerned that lending against collateral in operations that did not involve a real transaction of produced goods conduced to an excessive increase in credit. Moreover, the BdE had also been concerned that these operations opened the room for a larger number of counterparties for which there might not be a credit history readily available at the BdE's credit lists. Although these operations had historically yielded more to the BdE, as the Lombard rate had been traditionally higher than the discount rate (before the CSB reduction was put in place), the problem was more that these operations might not represent a self-liquidating commercial transaction. Also, these operations could involve a larger pool of borrowers whose use of liquidity provided might be opaque. Therefore, the evaluation counterparty emerged as a problem. In its "1896 Regulation for Branches", the BdE warned to[63]:

> *"(...) not give these operations* [advances] *great latitude, circumscribing them to cases that are undoubtedly far from any suspicion of a fradulent origin of the assets pledged (...). The Executive Board should reject all operations that are not presented by a person of notorious morality (...)."*

The quote above suggests that, by the late 19th century, the true collateral involved in these operations was, in fact, "borrowers morality". By 1916, the BdE had become already less conservative about advancing credit against collateral. Its "1916 Regulation for Branches" reads[64]:

> *"These operations* [advances] *will be given the latitude that specific conditions in each branch location determines."*

By 1932, the BdE had become much more keen to advance credit against collateral[65]:

> "[Advances] *provide, in general, either in the form of loans or short term credit accounts, the basis for positive profits, meaning that they*

should be given all the extension and amplitude compatible with the interests of the Banco; for this, the solvency of the borrowers should always be taken into account, as well as an estimation of the market value of the collateral pledged."

By the 1930s, the initial criteria of "borrowers' morality" was complemented by a more objective one, the market value of the pledged asset. During the 35 years that separate the first and the last quotes that refer to the exact same banking operation, the BdE stopped distrusting the "non-commercial" nature of the advance operation itself, but highlighted counterparty risk, as the pool of borrowers widened. In fact, the 1921 Banking Law tackled the counterparty risk problem by introducing CSB membership; as explained above, the latter acted as a guarantee that member banks abode by the same liquidity rules and minimum capital ratios.

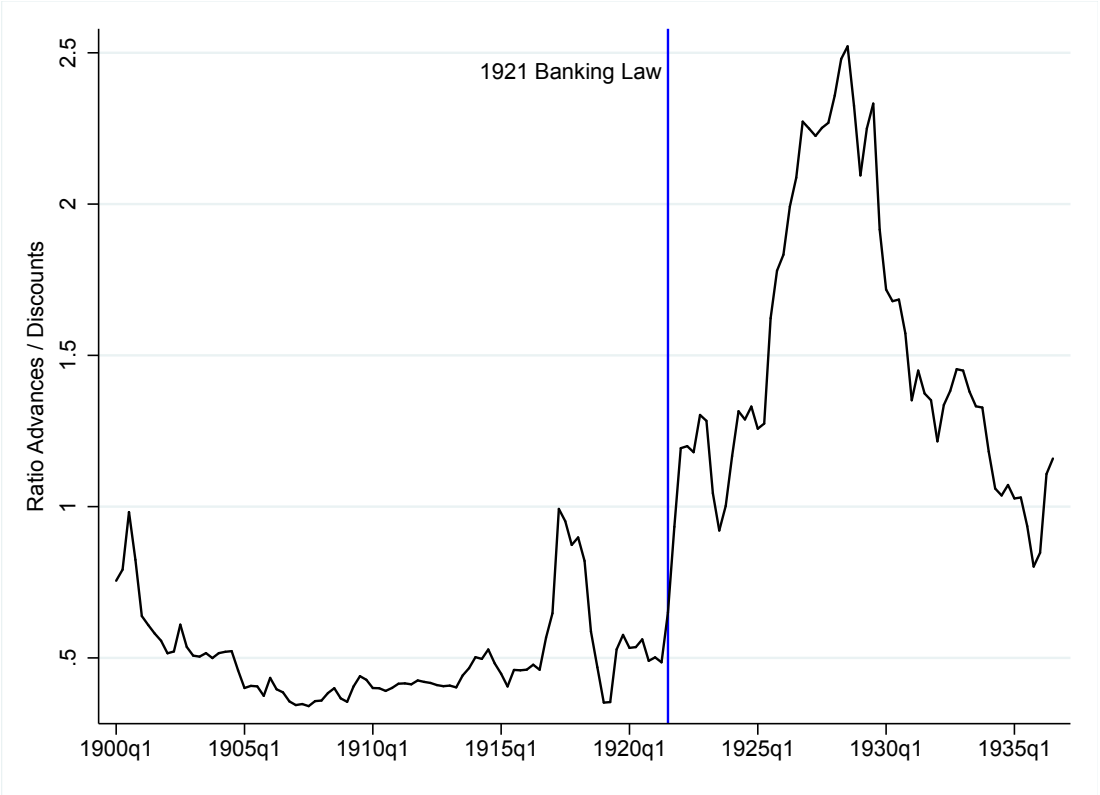


Figure 2.9: Changes in the balance sheet of the BdE (ratio of advances to discounts)

Source: own calculations, using (Martínez Mendez, 2005).

Once the 1921 Banking Law granted direct access to liquidity from the BdE

to all CSB members, the former had to change its lending policy. Figure 2.9 shows the ratio between the BdE's holding of advances and discounts in its balance sheet. Right after the law was passed in December 1921, the composition of the balance sheet of the BdE changed. Consistent with the BdE's attitude towards advances reflected in the quotes above, before the enactment of the 1921 Banking Law, the BdE interacted with its counterparties mostly by the outright purchase of bills of exchange; the ratio between advances and discounts was never above one[66]. After the law was passed, and given the new pool of actors, the BdE started to interact with CSB banks mostly by lending against collateral through advances. In turn, from December 1921, banks started to borrow from the BdE using public debt as collateral.

Ratio	Advances/Discounts			Public debt/portfolio		
Country	1880	1909	1928	1880	1909	1928
Austria	0.2	0.1	0.1	14%	2%	8%
Belgium	0.0	0.1	0.0	10%	9%	16%
Britain	0.9	0.6	1.0	38%	31%	60%
France	0.2	0.6	0.6	8%	6%	4%
Germany	0.2	0.3	0.1	4%	2%	1%
Italy	0.3	0.3	0.5	12%	19%	18%
Netherlands	0.9	1.1	0.9	0%	0%	0%
Norway		0.0	0.8	0%	0%	0%
Switzerland		0.1	0.4		0%	0%
Denmark			2.2		2%	0%
Finland		0.4	0.1		1%	16%
Bulgaria		3.5	1.7		45%	70%
Greece		5.2	1.0		50%	97%
Latvia			0.5			4%
Portugal		0.3	0.2		76%	84%
Poland			0.1			10%
Romania		0.4	0.6		13%	44%
Sweden		0.1	0.4		0%	1%
Czechoslovakia			0.7			90%
Yugoslavia		3.0	0.2			71%
Spain	**0.8**	**0.5**	**2.5**	**61%**	**38%**	**6%**

Table 2.3: Central banks' portfolio composition, 1880-1928

Source: Jobst and Ugolini (2016) for data from Austria to Switzerland (the figure for Britain is the average ratio for 1875-1885, as advances behave abnormally during some years and cause ratios that do not reflect the common practice of the Bank of England at the time). League of Nations (1925-37) for data from Denmark to Yugoslavia (1913 instead of 1909). Martínez Mendez (2005) for Spain (data is for 1900 instead of 1882).

When the Spanish peseta started to fall from 1928, the Government com-

missioned a study about an eventual return to the Gold Standard to a group of economists led by one of the most reputed economists of the time, Antonio Flores de Lemus (the so-called *Comisión del Patrón Oro*). The *Comisión* reported on the "indirect monetization" problem. A look at Table 2.3 illustrates the problem highlighted by the *Comisión*: by 1928 the BdE had the highest ratio of Advances to Discounts in its portfolio, while at the same time had the lowest percentage of public debt compared to most European countries at the time. The main reason why this figure was so low had to do with the way the 1921 Banking Law outsourced the monetization of public debt to the banking sector. This situation was clearly explained in the report the *Comisión* issued in 1929[67]:

> *"(...) Nowadays, the debts of the State are not a burden to the Banco* [BdE], *instead, the State places the bondholder* [the CSB bank participating in the primary market] *between the Treasury and the Banco. Discount policy is managed in such a way that the bondholder finds an immediate and direct profit in subscribing the bonds, as it can borrow from the Banco. The creation of credit is then in favour of the bondholder; the Banco's balance sheet is not inflated with public debt; now it is private instead of public debt, what fills the gap that in previous times was filled by the debts of the Treasury."*

The *Comisión* went on to warn about the impossibility of embarking into a successful exchange rate stabilization without addressing the time-inconsistency faced by fiscal authorities[68]:

> *"Our Banking Law clearly states that the State intervenes in the determination of the discount rate and the rate charged on advances against public debt. (...) it is a condition to the stabilization of our exchange rate that the production of public debt ceases (...)."*

Changes in the composition of the BdE's balance sheet did also bring about changes in its profit structure. Figure 2.10 shows the evolution of the Banco's profits by the type of operation and the ratio between profits from discounts and advances. Again, the main change came right after the 1921 Banking Law was passed. From 1921 onwards, no less than 50% of the Banco's profits came from advanced credit against public debt. As the rest of banks expanded their branch network and started competing with the BdE, its profits from discount operations

fell. This was not caused by a contraction in economic activity, as banks continued to expand their bill portfolio during the same years (Figure 2.11). While this explains the sharp increase in the ratio between profits from advances and discounts, it also reveals that banks' use of the new advance facility allowed the BdE to achieve a substantial increase in profits. More importantly, it also shows that after a relative decline in overall profits after 1926, these started increasing strongly again in parallel to the fall of the peseta.

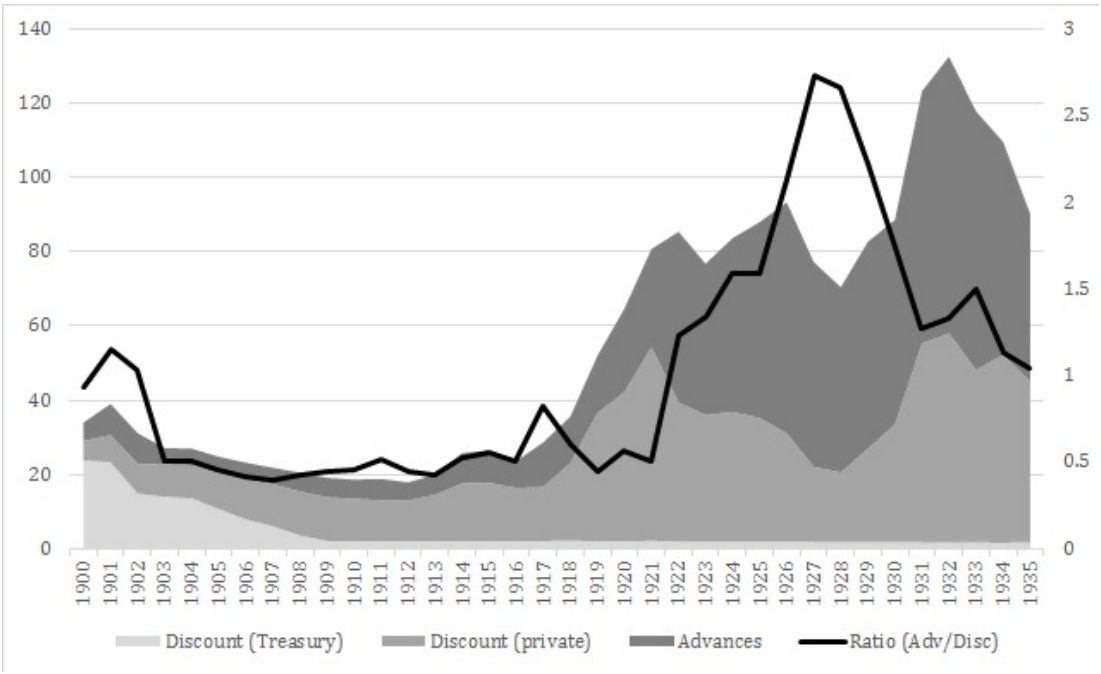


Figure 2.10: Composition of BdE's profits (1900-1935)
Source: *Memorias de las Sucursales del Banco de España.*

During the second half of 1927, banks started expanding their loan portfolios. To fund the expansion banks relied on two sources. First, and thanks to the extension of their branch network, they kept receiving retail deposits. Importantly, this increase in deposits was not driven by deposits in foreign exchange, as these had been decreasing steadily since the early 1920s (Figure 3.5). Second, and more importantly, during the last quarter of 1927, banks' holdings of public debt started increasing much faster than their holdings of commercial bills (Figure 2.11). This was facilitated by the debt conversion that took place in 1927-1928 (Figure 2.12). In the first months of 1927, the Government started the conversion of 5225 million pesetas from short-term floating debt into long term 5% redeemable bonds; by the end of the year, the conversion had been successfully completed, with banks ending up holding most of the newly issued consolidated

bonds (Martín-Aceña and Comín, 1984; Comín, 2012). The conditions of the conversion explain why banks engaged in this conversion strongly, taking into account how this debt could then be monetized at the BdE. They were offered two options: either a conversion to 85.5% of par, or at 98% with fiscal exemption of the prevailing 20% tax on public debt interest earnings (Comín, 1988; Pan-Montojo, 2014). Both cases represented an attractive option for banks, given that this increased their ability to borrow from the BdE and that, by that time, the Lombard rate for these bonds was at 4% (Figure 2.4).

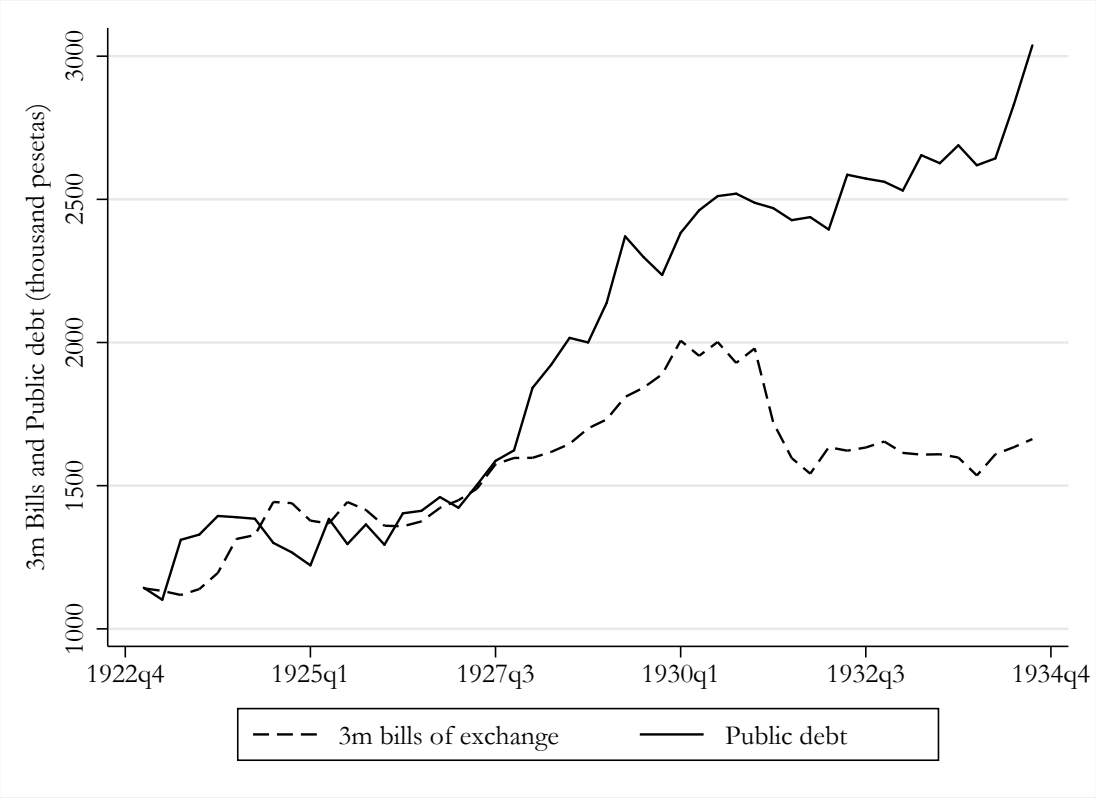


Figure 2.11: Composition of banks' portfolios (1922q4-1934q4)
Source: *Boletines del Consejo Superior Bancario*

Just as the depreciation of the peseta started to become the main concern of the Government from early 1928, the framework that the 1921 Banking Law had put in place revealed its pro-cyclical nature. In a scenario of fiscal and current account deficits and the tightening of international financial markets, the Government needed to issue new debt to fund its attempts to stabilize the exchange rate. The strategy, however, was always going to be self-defeating had it not been coupled with a an improvement on fiscal accounts (Figure 2.12). To make sure that this debt would be absorbed by the banking system, it had to pay higher

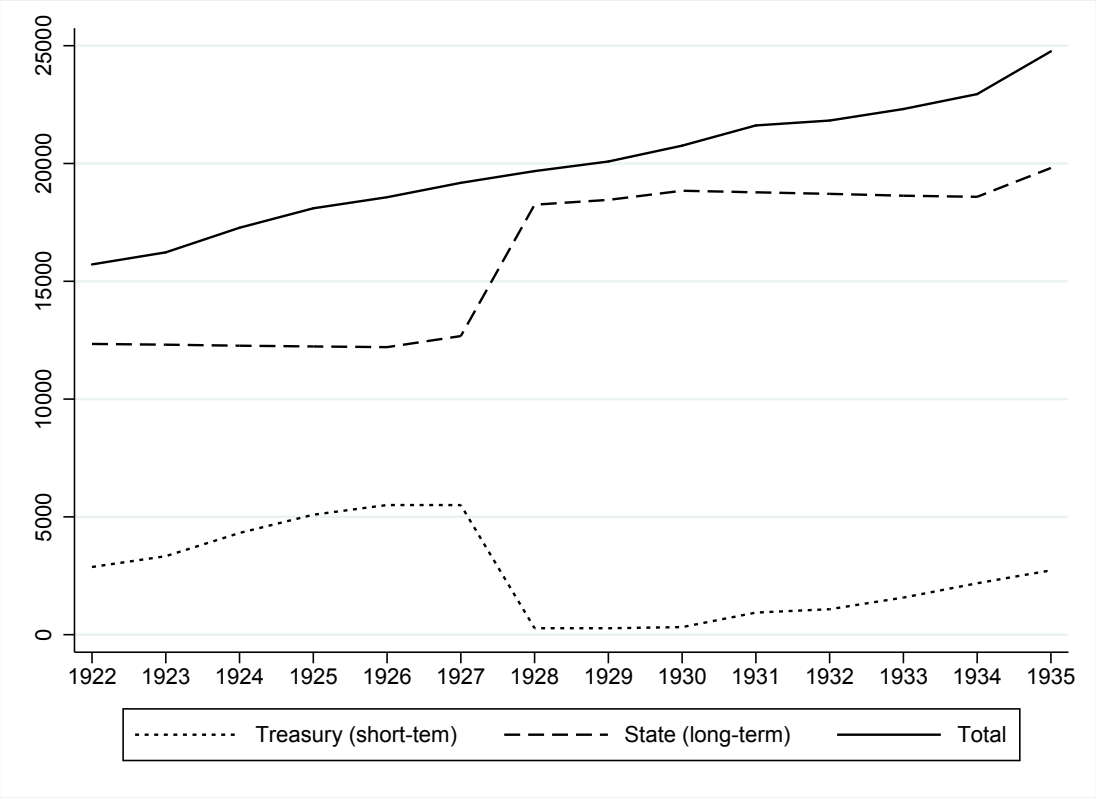


Figure 2.12: Public debt in circulation (1922-1935)
Note: debt is in million pesetas. Source: Comín and Diaz (2005b).

yields. Banks would subscribe the debt as long as it was possible for them to use it at the discount window of the BdE. Finally, while the BdE warned against the link between new issuances of debt and the depreciation of the peseta, the 1921 Banking Law had discharged it from any direct responsibility over the evolution of the exchange rate. In addition, CSB membership granted banks with access the BdE's Lombard facility with the only requirement that they pledged public debt. The BdE could not deny CSB banks' these kind of operations. Therefore, as long as the amount of pesetas in circulation was below its legal maximum, the BdE could not impose any binding limit on CSB banks' demand for liquidity if they held public debt. Because of that, and with its profits increasing as banks made use of the BdE's Lombard facility during the boom, the latter had not only little scope, but also little incentive to stop the lending boom. In sum, from 1928, the depreciation of the peseta became impossible to stop by domestic means.

As the peseta kept falling, the Minister of Finance of the Dictatorship embarked into increasingly costly stabilization policies[69]. One after another, these policies failed. Unable to stop the expansion of lending and growing pressure on

the balance of payments–as current account deficits kept mounting–the Minister finally embarked into what was going to be the last and definitive stabilization plan: the issuance of gold bonds in the last days of 1929 and the first days of 1930. As a last attempt to stabilize the peseta, which had been falling since mid-1928, the Minister of Finance of the Dictatorship, Mr. Jose Calvo-Sotelo, issued 350 million pesetas in 10 year gold bonds. Gold bonds were very attractive for subscribers: they were issued at 6% and in virtue of the 1921 Banking Law, they were eligible as collateral at the discount window of the BdE at a cheaper rate that had been established *ad hoc* for this specific issuance (4.0%). These bonds also carried taxation exemptions. Given the conditions of the bond issuance, Spanish banks subscribed all the bonds that the Government had earmarked for them. However, Spanish banks didn't hold any gold themselves, and they held almost no foreign exchange in cash. The bonds had to be subscribed in gold (either coin, bullion or gold-convertible currencies), so in order to subscribe the gold bonds, banks borrowed abroad[70]. Banks did so by embarking into short-term forward contracts in London (so-called "dobles" in Spain) by which they sold spot pesetas against Sterling, and repurchased them at a term no longer than three months. In doing so, banks ended up with large currency mismatches in their balance sheets. In fact, the issuance of gold bonds did nothing but to transfer currency mismatches from the Government to the banking system (and the public). As the peseta kept falling, banks' currency mismatches mounted, and banks needed more pesetas to roll over their forward operations in Sterling (Figure 3.5).

Attempts by the Government to stabilize the peseta also failed because they involved issuing more public debt, since the BdE had been freed from the defense of the exchange rate by the 1921 Banking Law. The Government's repeatedly failed attempts to stabilize the peseta were accompanied by the issuance of new debt that had to pay higher and higher yields. This was not only the case with gold bonds. All new issuances of public debt were done at rates above the Lombard rate (Martínez Mendez, 2005). To ensure successful new issuances, the Government had to grant increasingly higher yields, not only because this was in line with banks' incentives to purchase the bonds, but because as budget and current account deficits increased, the price of already floating bonds also fell (Figure 2.4). In sum, attempts to stop the depreciation of the peseta were not consistent with curbing bank lending, which boomed almost uninterruptedly until the 1931 crisis (Figure 2.13).

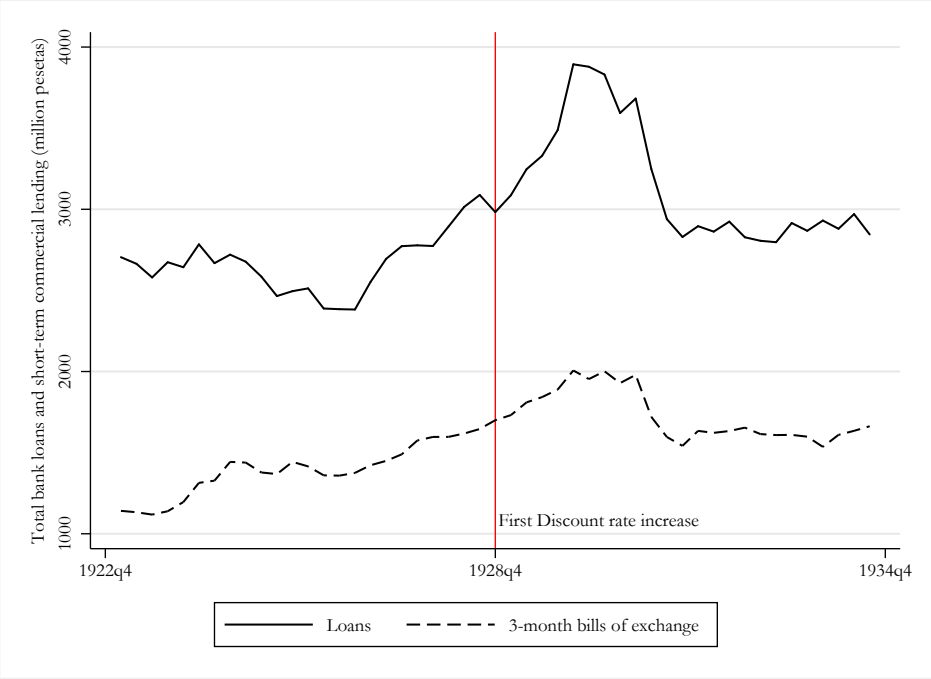


Figure 2.13: Evolution of total bank short term commercial credit and lending (1922q4-1934q4)

Source: *Boletines del Consejo Superior Bancario.*

Amid these interventions in foreign exchange markets, the Government and the BdE tried to stop the depreciation of the peseta by raising interest rates. They did so in three occasions: 1928, 1930 and 1931. By that time, however, Spanish monetary authorities had already accepted that the only monetary policy tool available at the BdE to control the evolution of credit was not going to be very effective in curbing bank lending and thus helping stop the rapid exchange rate depreciation that the country was experiencing. Contemporaries, as well as policymakers became well aware of the limitations that discount rate policy had as a monetary policy tool. Critiques of the 1921 Banking Law had precisely highlighted that this failed from deeming BdE rates effective. In the following sections I conduct an empirical analysis to evaluate the extent to which these critiques were right and changes in BdE rates had any effect on bank lending during this period.

2.4 Monetary policy transmission model and empirical estimation

The goal of this section is to measure the impact of changes in the main BdE monetary policy indicators on bank lending. I estimate a loan equation derived from the monetary policy transmission model proposed by Ehrmann, Gambacorta, Martínez-Pages, Patrick, and Worms (2003), which captures the impact of changes in policy rates on bank lending. This model is chosen because it allows for interactions between the monetary policy indicator and different bank characteristics, in order to capture the asymmetries in the transmission of monetary policy depending on these characteristics. Details about the model are described and discussed in the Appendix. The estimated loan equation is the following:

$$\begin{aligned}\Delta \ln(Loans_{it}) = a_i &+ \sum_{j=1}^{l} b_j \Delta \ln(Loans_{it-j}) + \sum_{j=0}^{l} c_j \Delta MonetaryPolicy_{t-j} + \\ &+ \sum_{j=0}^{l} d_j \Delta \ln(GDP_{t-j}) + \sum_{j=0}^{l} e_j \cdot CPI_{t-j} + fCharacteristic_{it-1} + \\ &+ \sum_{j=0}^{l} g_{1j} Characteristic_{it-1} \cdot \Delta MonetaryPolicy_{t-j} + \\ &+ hControls_{it} + \varepsilon_{it}\end{aligned} \tag{2.1}$$

where $i = 1, ..., N$, N the number of banks and $t = 1, ..., T$ with T the number of quarters. For the first term on the right-hand side of the equation, l is the number of lags of the dependent variable (log of loans in pesetas) included in the estimation, and accordingly L_{it} is the end-of-quarter loan portfolio of bank i in period t (lending to corporates and families). The model is estimated with four lags of the dependent variable. To capture the effects of the 1921 Banking Law on the transmission of monetary policy, I use different indicators for this variable: Discount and Lombard rates for CSB members, the YTM of public debt, and the spread between the latter and the Lombard rate (see below). Economic output and prices are captured in GDP_t and CPI_t, respectively. Bank-specific characteristics (size, liquidity and capital ratios and CSB membership) are captured by the vector x_{it} and, as explained above, they are interacted with the

monetary policy variable. I include a number of controls in the regression: the Madrid stock market index, an index of the exchange rate of the peseta, foreign central banks' discount rates and a banking crisis dummy for the 1931 crisis[71]. As in all standard estimations in the literature, the model allows for fixed effects, which are captured by the intercept a_i which is specific for each bank (Angeloni, Kashyap, and Mojon, 2003; Gambacorta and Marques-Ibañez, 2011).

If central bank rates are effective in reducing bank lending, one would then expect the coefficient associated with $MonetaryPolicy_{t-j}$ to be negative. In the case at hand, however, this might not happen. In my case, banks had no reason to delever when the BdE raised rates. Their reserves were unchanged, precisely because they could keep pledging public debt with the BdE. Also, any increase in the cost of funding on the liabilities side could also be transmitted to the asset side through an increase in the interest rate at which loans were made to customers (given that demand for loans was sustained). In the original model presented by (Ehrmann et al., 2003) banks have to delever because their reserves become insufficient after the central bank absorbs them through open market sales that raise market rates. In my case, monetary policy (rate changes) is expected to be ineffective because it does not lead to a reduction in base money; continued deficits and their monetization kept the monetary base increasing regardless of BdE rate changes.

There are two challenges when estimating Equation 2.1. The first one is that in order to allow for dynamics, the model has to include the lagged value of the dependent variable. The introduction of dynamics in the panel estimation needs to be taken into consideration, as the error term can be correlated with past realizations of the dependent variable, introducing endogeneity. The second is that in order to disentangle the effect of changes in monetary policy from other macroeconomic variables, the model needs to include measures of real output, inflation, stock market index, exchange rate, etc. All these measures—mostly but not only real output—complicate causal inference from the estimation, as business cycle dynamics are expected to be a major determinant of demand for loans. This poses a problem because we are willing to isolate the effect of monetary policy in the dependent variable, that is in bank loan supply.

The literature interested in identifying the transmission of monetary policy has traditionally dealt with these two challenges by implementing the difference

GMM estimator developed by Arellano and Bond (1991), which provides with efficient and consistent estimators, provided that the instruments are chosen to take into account the serial correlation properties of the model[72]. Dynamic-panel estimation with GMM is, in fact, indicated for panels in which T is relatively small and N is relatively large. Therefore, and in order to have a balanced panel I limit the analysis to the period that maximizes the number of bank-quarter observations while still includes the crucial years of 1928-1931. The final sample leaves me with a balanced panel that comprises 130 banks over 23 quarters (1927q1-1932q3), so a total of 2990 bank-quarter observations (see Tables 2.8 and 2.9 in the Appendix). From this, 96 are CSB members, while 34 are non-members. Foreign banks are excluded from the estimation[73].

2.5 Data

2.5.1 Bank balance sheets

Starting in the last quarter of 1922, both members and non-members of the CSB submitted their harmonized balance sheets and the CSB published and distributed them afterwards. I collect this data from the *Boletines del Consejo Superior Bancario*, which contains quarterly observations on a number of different items for assets and liabilities from 1922q4 to 1934q4. Not only CSB member banks are included, but also non-members and foreign banks. This data was published with an average delay of two years[74]. Around 500 copies were published and distributed, to banks that sent their balance sheets and to other government and financial institutions[75]. The resulting sample consists of quarterly balance sheets for 302 banks over the period 1922q4-1934q4, which makes a total of 49 time periods. Observations are end of period. As explained above, however, I limit the sample to 130 banks for the 1927q1-1932q3 period. This captures all the changes in the BdE rate and, more importantly, the surge in bank lending that started in 1927 (Figure 2.13). In order to estimate Equation 2.1 I aggregate three different types of bank loans: call loans, loans on collateral and long term loans. All loans are in pesetas. I use other items of bank balance sheets to construct liquidity and capital ratios (see below).

2.5.2 Monetary policy indicators

The indicator of monetary policy is the main variable of interest. Following the contemporary discussion on the inability of the BdE to control aggregate lending that took place during the parliamentary debate on the 1921 Banking Law, I use the two main rates of the BdE: the discount rate and the Lombard rate as monetary policy indicators. Both are used including the reduction that CSB banks enjoyed. Data on interest rates is taken from Martínez Mendez (2005). Interest rates are introduced at their end of quarter value. In addition to official rates, I use two more indicators of monetary conditions: the yield to maturity (YTM) of public debt and the spread between the latter and the Lombard rate (see Figure 2.5). These last two indicators are expected to capture the channel through which Spanish monetary authorities lost control of the evolution of aggregate credit following the 1921 Banking Law. All monetary policy indicators are shown in Figure 2.4. Given the move towards restrictive monetary policy that started in early 1928 in the United States and Germany, in all specifications of the model I include the reference interest rate of foreign central banks. This is also to control for contemporaries' concerns about foreign central bank rate changes causing withdrawal of funds from Spain[76]. Interest rates from the Bank of England, the Federal Reserve, the Banque de France and the Reichsbank are included as controls in all specifications. However, coefficients associated with foreign central bank rates turn out to be either not statistically significant or tiny compared to other variables. To make tables more readable, I do not report these coefficients, although they do not play any significant role[77]. A discussion of the rate changes is provided in the Appendix.

2.5.3 Economic activity

There are no readily available quarterly GDP estimates for the Spanish economy during the period I study. A solution to this problem could be using annual GDP to determine the end-of-year levels and interpolate the industrial production index that was elaborated by the INE and included 14 different industries in order to proxy the within-year variation. However, as Albers (2018) point out, using industrial production to proxy economic activity in developing countries could be misleading, because unconditional convergence in the industrial sector during the 1920s leads to a partial picture, in which industry is given too much weight compared to its relative importance for GDP. For the years under study in this

paper, Spain was still mainly an agricultural country. Between 1920 and 1935, agricultural employment was never below 45% of the total, and accounted for more than a quarter of GDP (Prados de la Escosura, 2003).

Therefore, I use the Economic Activity Index (EAC) created by Albers (2018) to have a better grasp of the dynamics of the period. The main difference between the methodologies used in the two indexes is that the EAC does not make any ex-ante assumptions on the weights of a certain industry or indicator. Instead, the weights are obtained depending on how strong is the co-movement between one indicator and the rest. This provides a broader sense of the dynamics of the economy at the time. Figure 2.14 compares the evolution of the two indexes[78]. The EAC index and the industrial production follow similar patterns, but industrial production is much more volatile. In addition, a longer period is available for the EAC index, and its methodology is consistent over time[79]. Figure 2.14 shows that economic activity accelerated substantially from mid-1927, which is when banks holdings of public debt started to outpace their portfolios of bills of exchange (Figure 2.11).

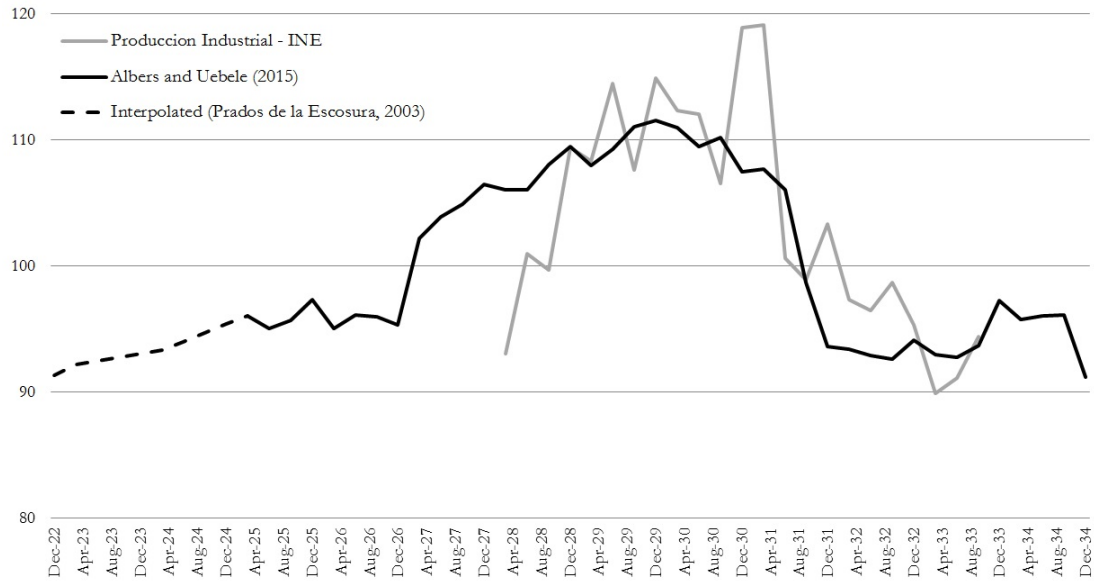


Figure 2.14: Economic Activity indicators compared, 1925q1-1934q4

Source: see text.

2.5.4 Prices

There are two price indexes available in the Spanish literature. On the one hand, Prados de la Escosura (2003) provides the annual GDP deflator from 1850. On the other hand, Maluquer de Motes (2013) elaborated a consumer price index for the period 1830-2012, which includes monthly data for some groups of goods and periods. In addition, I collect a third series, from the Statistical Yearbook (Anuario Estadistico) from the National Institute of Statistics (INE), which contains monthly information on prices at the individual good-level. The INE also elaborated a monthly price index of consumer goods, agricultural goods, imports and exports.

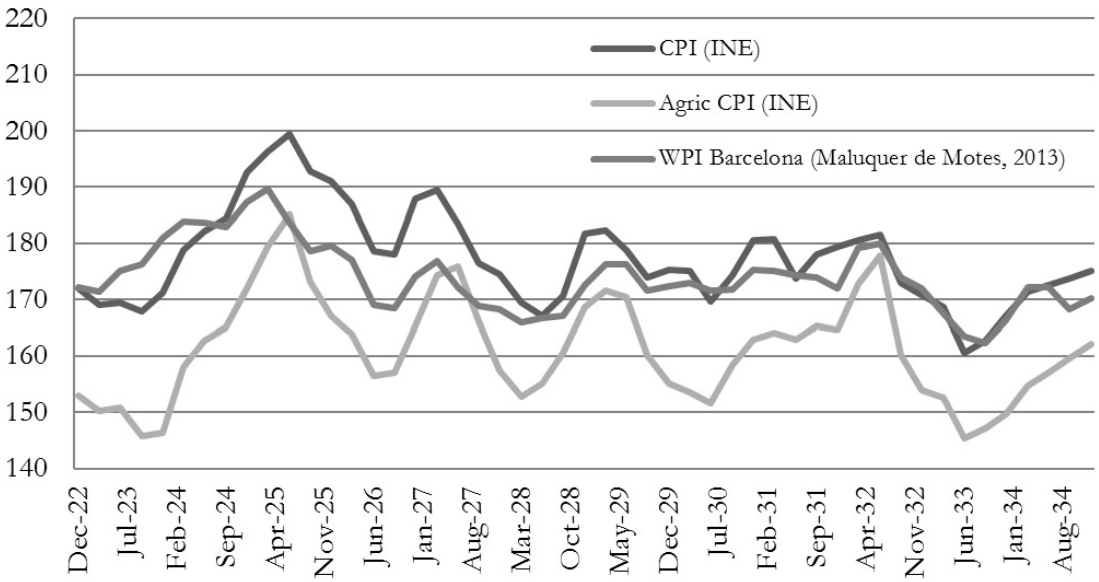


Figure 2.15: Different price indexes (1922q4-1934q4)

Source: see text.

Figure 2.15 shows the three different price indexes: the CPI and the agricultural price index elaborated by the INE, and the WPI for the city of Barcelona elaborated by Maluquer de Motes (2013). All indexes are originally provided on a monthly basis, so I average them to obtain the quarterly data. As expected, the agricultural price index is much more volatile than the other two; seasonality is slightly washed away by the two other indexes. Interestingly, all indexes show that consumer, wholesale and agricultural prices started to fall from mid-1932, when the peseta was pegged to the French Franc.

2.5.5 Bank characteristic variables

Following the standard literature in the transmission of monetary policy, I include three bank characteristics: size, capital ratios and liquidity ratios [80]. Bank size is calculated as the log of total assets. Capitalization as the ratio of capital and reserves over total assets. Finally, liquidity is computed as the ratio of liquid assets over total assets[81]. While size and capitalisation can be calculated without major problems, liquidity is difficult to measure for this particular period in Spain. In fact, there were two different *official* measures of liquidity at the time: one from the CSB and the other from the BdE. There are remarkable differences in the categories included as liquid assets and short term liabilities between the two. For example, the CSB did not consider long term loans as liquid assets, whereas the BdE did. On the contrary, the CSB included loans in foreign currency and interbank deposits as liquid assets, but the BdE did not. In the short term liabilities side, the CSB did not consider deposits with maturities over a month to be short term, nor it did consider foreign currency deposits as such. However, the BdE included all kinds of deposits, regardless of their maturity as short term liabilities. This discrepancy is not surprising, as the 1921 Banking Law left it to the CSB to decide the liquidity and capitalisation rules that its member banks would abide to, highlighting the challenges that regulatory change faced when trying to bring together a single measure of liquidity accepted by all banking and monetary institutions.

These differences make it difficult to create a single measure of liquidity. First, because the CSB did have a minimum to which one can compare the actual situation of banks (Figure 2.6), but the BdE only elaborated a ratio between liquid assets and short term liabilities. In the case of the BdE, a ratio above 100 probably meant that a bank was considered to be in a liquid position, but no explanation is available on specific limits for that ratio[82]. Second, because it is sensible to think that both definitions had different purposes. The CSB established its final measure of liquidity in 1924. The BdE, instead, elaborated its measure in an occasional paper published in 1935 (*Liquidez bancaria*), only for the largest banks and covering the 1931-1934 period, after it had already provided some banks with emergency liquidity in the 1931 crisis. In sum, as expected, the BdE was much more conservative with the measure of liquidity than the CSB. However, the BdE measure was irrelevant, as it did not have any binding effect on CSB banks, because they would have access to its discount window simply by being within the liquidity limits established by their own rule. For the empirical estimation, I

calculate a third measure of liquidity based on what can be realistically thought of a very liquid asset at the time. My third measure of liquidity only includes cash, 3-month bills of exchange, public debt and cash over total assets. In further estimations of the model, I divide the liquidity measure in bills and public debt separately (see below). In addition, I include the main characteristic of interest, which is CSB membership. Membership takes value 1 for non member banks and 0 for CSB member banks, in order to easily interpret the coefficients in the estimations below. The interaction between membership and monetary policy indicator captures the differential reaction of non-member banks to changes in monetary policy. Membership is also interacted with the other characteristics (size, capitalisation and liquidity).

2.6 Results

The results of estimating Equation 2.1 are presented in Table 2.4. All coefficients reported are long-run, which includes the effect of changes in the independent variable on future realizations of the dependent variable. In all specifications, the main coefficients of interest are those associated to the Monetary Policy Indicator and its interactions with Liquidity and CSB Membership (in bold). In Columns 1 and 2, the Discount Rate of the BdE is used as the main monetary policy indicator[83]. In Columns 3 and 4, the monetary policy indicator is the Lombard Rate. In Columns 5 and 6, it is the yield of public debt and, in columns 7 and 8 it is the spread between the YTM of public debt and the Lombard rate. Regression diagnostics are also reported[84].

Results in Columns 1 and 2 of Table 2.4 show that changes in the discount rate had, on average, a negative impact on bank lending (Column 1). However, the coefficient is entirely driven by non-member banks, that is, by banks that had no direct access neither to the rediscount of bills nor to advances at the BdE. As a result, the negative sign of the coefficient associated with the Discount rate of the BdE disappears when the latter is interacted with the CSB membership dummy (Column 2). On average, CSB member bank lending was unaffected by changes in the discount rate. This coefficient is expected to capture the fact that CSB banks were able to avoid adjusting their loan portfolio following a change in the discount rate because they could pledge public debt at the BdE at rates below the YTM. This, however, was something that was not available for non-members, as

they had to either borrow at more expensive rates from the BdE (which they did not do) or to borrow from CSB banks (or foreign) banks at higher rates. In fact, the differential reaction of the two types of banks illustrates how their differential access affected their lending schedules. Non-members did not borrow from the BdE; the latter could refuse to lend to them by virtue of the 1921 Law. All CSB banks, instead, could borrow using public debt. In a way, this created an "inner circle" in which CSB banks operated, and an "outer circle" in which non-members operated. As discussed above, CSB banks transmitted rate changes from their liabilities to their assets, and this included lending to non-members. The latter, however, could then not transmit higher rates further, as these would be too high to meet demand. The need to maintain profitability conduced non-members to cut lending, something that CSB-members (who did the lion's share of lending) could avoid.

A similar picture emerges when using the Lombard Rate as the monetary policy indicator, with non-member banks driving the negative results (Columns 3 and 4). Results in Columns 1 to 4 are almost identical, because when the BdE raised the Discount Rate it also raised the Lombard rate and both were at the same level (Figure 2.4). This happened in every rate change, except the one that took place in 1931, in which the Lombard rate was left unchanged. This explains the smaller magnitude of the coefficients for the Lombard rate in Column 2.

Because of the mechanism of indirect monetization described above, the YTM of public debt could not reflect actual monetary conditions for banks, as they could just transform this debt into even more liquid assets and as long as there was growing demand for credit. As I showed above, from 1927 government debt in bank balance sheets started growing much faster than commercial bills. This crowding-out also was reflected at the discount window of the BdE, in which virtually all CSB banks used public debt for Lombard lending, instead of the rediscount of bills of exchange. In addition, the Government could issue new debt and set a specific Lombard rate for each type of bond, as I described above for the extreme case of gold bonds, and as reflected in Figure 2.4. Columns 5 and 6 in Table 2.4 illustrate this process. When I use the yield of public debt as a an indicator of monetary conditions, both groups show a similar behavior. Increased supply of government bonds and continued fiscal deficits translated into higher yields. The results show that higher yields were more than compensated by the fact that public debt could be automatically exchanged for cash at the discount

window of the BdE. Columns 7 and 8 confirm that the spread between the yield of public debt and the Lombard rate was also associated with an expansion in bank loans.[85]

MP measure	Discount Rate		Lombard Rate		Public Debt Yield		Spread	
	1	2	3	4	5	6	7	8
MP	**-0.033*** **	**0.021** **	**-0.014*** **	**0.004**	**0.035*** **	**0.040*** **	**0.023*** **	**0.019*** **
	(0.004)	(0.009)	(0.005)	(0.011)	(0.004)	(0.005)	(0.002)	(0.005)
MP*No-CSB		**-0.252*** **		**-0.072*** **		**0.021*** **		**0.039*** **
		(0.018)		(0.016)		(0.008)		(0.007)
GDP	0.293***	0.026	0.292***	0.093	0.192***	-0.276***	0.270***	0.131*
	(0.025)	(0.077)	(0.027)	(0.068)	(0.022)	(0.069)	(0.025)	(0.074)
CPI	0.362	0.633*	0.567**	0.726	1.030***	5.697***	0.763***	0.540***
	(0.228)	(0.333)	(0.226)	(0.490)	(0.188)	(0.433)	(0.189)	(0.061)
Stock Market	-0.133***	-0.232***	-0.116***	-0.188***	-0.063***	0.026	-0.096***	-0.120***
	(0.013)	(0.022)	(0.014)	(0.022)	(0.013)	(0.022)	(0.012)	(0.025)
Exchange Rate	0.133***	0.013***	0.110***	0.009***	0.046***	-0.002**	0.096***	-0.000
	(0.011)	(0.001)	(0.011)	(0.001)	(0.013)	(0.001)	(0.011)	(0.001)
1931 crisis	-0.170***	-0.238***	-0.174***	-0.208***	-0.225***	-0.301***	-0.206***	-0.269***
	(0.008)	(0.013)	(0.008)	(0.013)	(0.010)	(0.019)	(0.008)	(0.015)
MP*GDP	0.068***	0.113***	0.070***	0.124***	0.034***	-0.003	0.048***	0.228**
	(0.004)	(0.015)	(0.004)	(0.018)	(0.005)	(0.013)	(0.005)	(0.094)
MP*CPI	-0.045	-0.251***	-0.104**	-0.251**	-0.245***	-1.236***	-0.161***	-1.547***
	(0.052)	(0.070)	(0.052)	(0.109)	(0.042)	(0.087)	(0.041)	(0.138)
MP*GDP*No-CSB		0.077***		0.004		-0.027*		-1.336***
		(0.017)		(0.019)		(0.016)		(0.125)
MP*CPI*No-CSB		0.559***		0.374***		0.307***		0.301**
		(0.022)		(0.017)		(0.018)		(0.151)
MP*Size		0.044***		0.013		-0.021***		0.019***
		(0.012)		(0.022)		(0.005)		(0.005)
MP*Size*No-CSB		-0.007		0.010		0.095***		-0.001
		(0.016)		(0.027)		(0.011)		(0.012)
MP*Capital		1.031***		-0.098		-0.345***		0.151
		(0.207)		(0.551)		(0.100)		(0.128)
MP*Capital*No-CSB		2.550***		3.520***		1.506***		0.148
		(0.227)		(0.567)		(0.125)		(0.106)
MP*Liquidity		**1.218*** **		**1.298*** **		-0.059		**0.721*** **
		(0.252)		(0.353)		(0.115)		(0.097)
MP*Liquidity*No-CSB		**-2.713*** **		**-2.170*** **		**-0.469*** **		**-1.168*** **
		(0.237)		(0.318)		(0.092)		(0.084)
AR(1) Test, p-val	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
AR(2) Test, p-val	0.544	0.444	0.502	0.774	0.592	0.158	0.520	0.634
Sargan Test, p-val	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Hansen Test, p-val	0.736	0.326	0.726	0.532	0.758	0.284	0.721	0.434
Num. banks	130	130	130	130	130	130	130	130
Num. instruments	147	129	147	129	147	129	147	129
Observations	2,802	2,600	2,802	2,600	2,802	2,600	2,802	2,600

Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1.

Table 2.4: Loan equations with different indicators of monetary policy

While these results confirm contemporaries concerns that BdE rates were ineffective for CSB banks, they do not say much about the precise channel through which this lack of effectiveness operated. In this sense, there is an interesting result that stands out from Table 2.4. Theoretical and empirical work on the transmission of monetary policy finds that, all things equal, the more liquid banks are, the less sensitive their lending is expected to be when interest rates change (Kashyap and Stein, 1995, 2000; Angeloni et al., 2003; Ehrmann et al., 2003; Ehrmann and Worms, 2004; Gambacorta, 2005; Gambacorta and Marques-Ibañez, 2011). However, and at odds with the consensus in the literature, all estimations in Table 2.4 produce a negative estimated coefficient for the interaction between the monetary policy indicator and the liquidity ratio for non-member banks. This would imply that, being more liquid than CSB members, non members would react more to changes in the BdE rate. However, this is due to the way liquidity ratios are calculated. In the loan equation that I estimate on Table 2.4, liquidity ratios include banks' holdings of 3m bills of exchange, public debt and cash as a proportion of their total assets. This is a standard definition of liquidity. However, and precisely because of the argument presented in previous sections, these three assets can not be considered equally liquid for all banks; the BdE still had discretion on the eligibility of bills of exchange (and would not rediscount bills held or accepted by non-members). However, it was forced to grant advances to CSB members when they pledged public debt. Therefore, public debt ought to have carried had a substantial liquidity premium over commercial bills. This implies that banks with more public debt in their portfolios should be able to increase their liabilities at cheaper rates by pledging public debt at the BdE. It is precisely this ability to counter Discount rate hikes by pledging public debt what is expected to eliminate the friction in reallocating liabilities that causes central bank rates to influence bank lending. Because of that, it is necessary to disaggregate the liquidity measure to identify the precise channel through which this a priori differential lending reaction based on liquidity operates.

Table 2.5 runs six new specifications of Equation 2.1 with different measures of liquidity: the original measure, bills of exchange as percentage of total portfolio, and the same for public debt. In this new specification, the sign and magnitude of the coefficients associated to the interaction between the monetary policy indicator, liquidity and membership are intended to capture the liquidity premium that public debt carried for CSB banks. Findings provide an answer to the counterintuitive results presented in Table 2.4. While all other coefficients tell

MP measure	Discount Rate			Lombard Rate		
Liquidity measure	All	Bills	Public Debt	All	Bills	Public Debt
	1	2	3	4	5	6
MP	**0.021****	**0.019****	**0.022****	**0.004**	**0.004**	**-0.002**
	(0.009)	(0.009)	(0.009)	(0.011)	(0.011)	(0.011)
MP*No-CSB	**-0.252*****	**-0.277*****	**-0.266*****	**-0.072*****	**-0.077*****	**-0.080*****
	(0.018)	(0.019)	(0.018)	(0.016)	(0.017)	(0.016)
GDP	0.026	-0.124	0.054	0.093	0.247***	0.133**
	(0.077)	(0.076)	(0.075)	(0.068)	(0.061)	(0.062)
CPI	0.633*	0.328	0.430	0.726	0.528	0.344
	(0.333)	(0.350)	(0.358)	(0.490)	(0.452)	(0.401)
Stock Market	-0.232***	-0.220***	-0.207***	-0.188***	-0.167***	-0.192***
	(0.022)	(0.021)	(0.022)	(0.022)	(0.021)	(0.017)
Exchange Rate	0.013***	0.012***	0.012***	0.009***	0.008***	0.009***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
1931 crisis	-0.238***	-0.234***	-0.222***	-0.208***	-0.188***	-0.208***
	(0.013)	(0.014)	(0.014)	(0.013)	(0.010)	(0.012)
MP*GDP	0.113***	0.116***	0.081***	0.124***	0.088***	0.118***
	(0.015)	(0.017)	(0.016)	(0.018)	(0.018)	(0.015)
MP*CPI	-0.251***	-0.173**	-0.191**	-0.251**	-0.192*	-0.156*
	(0.070)	(0.073)	(0.075)	(0.109)	(0.100)	(0.090)
MP*GDP*No-CSB	0.077***	0.091***	0.084***	0.004	0.008	0.007
	(0.017)	(0.022)	(0.017)	(0.019)	(0.021)	(0.020)
MP*CPI*No-CSB	0.559***	0.547***	0.546***	0.374***	0.371***	0.382***
	(0.022)	(0.025)	(0.023)	(0.017)	(0.018)	(0.019)
MP*Size	0.044***	-0.280***	-0.040***	0.013	0.037	-0.065***
	(0.012)	(0.028)	(0.009)	(0.022)	(0.034)	(0.017)
MP*Size*No-CSB	-0.007	0.448***	0.138***	0.010	-0.456***	-0.048
	(0.016)	(0.052)	(0.015)	(0.027)	(0.109)	(0.036)
MP*Capital	1.031***	-1.928***	-0.022	-0.098	-3.381***	-3.174***
	(0.207)	(0.337)	(0.149)	(0.551)	(0.614)	(0.445)
MP*Capital*No-CSB	2.550***	4.397***	2.455***	3.520***	4.274***	4.599***
	(0.227)	(0.405)	(0.185)	(0.567)	(0.432)	(0.371)
MP*Liquidity	**1.218*****	**-2.556*****	**0.673*****	**1.298*****	**2.592*****	**-1.223*****
	(0.252)	(0.198)	(0.116)	(0.353)	(0.681)	(0.468)
MP*Liquidity*No-CSB	**-2.713*****	**1.998*****	**-1.181*****	**-2.170*****	**-5.005*****	**2.556*****
	(0.237)	(0.265)	(0.115)	(0.318)	(0.902)	(0.702)
AR(1) Test, p-val	0.000	0.000	0.000	0.000	0.000	0.000
AR(2) Test, p-val	0.444	0.143	0.161	0.774	0.592	0.423
Sargan Test, p-val	0.000	0.000	0.000	0.000	0.000	0.000
Hansen Test, p-val	0.326	0.444	0.430	0.532	0.438	0.316
Num. banks	130	130	130	130	130	130
Num. instruments	129	129	129	129	129	129
Observations	2600	2600	2600	2600	2600	2600

Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1.

Table 2.5: Loan equations with different measures of liquidity

the same story—the average effect of changes in the monetary policy indicator on lending is stable—those associated to liquidity are different. CSB members and non members, reacted differently to changes in BdE rates. When the BdE raised the discount rate, CSB members holding a larger share of public debt in their portfolios were not reactive to the rate change. However, those that held more bills of exchange were more likely to contract lending. This provides an explanation for the lack of transmission of BdE rate changes to bank lending, but also shows that on average, CSB members faced a liquidity penalty for holding bills of exchange, while the contrary applied to public debt. The opposite picture comes up when I use the Lombard rate as monetary policy indicator in Columns 4 to 6 in Table 2.5. CSB banks holding more public debt were more sensible to changes in this rate. CSB banks backed their loan expansion by subscribing public debt while, for non-members this was not an equally viable strategy. This explains why CSB banks kept accumulating public debt throughout the period while non-CSB banks didn't[86].

In sum, results from Tables 2.4 and 2.5 confirm that rate changes implemented by the BdE during the years when the peseta depreciated had no impact on bank lending for CSB members. This reflects the limitations of the 1921 Banking Law outlined in previous sections. While CSB banks were precisely the group of banks that were supposed to be the target of the BdE's interest rate policy, they had a mechanism to avoid that. Although there is no direct evidence of that, it is likely that this explains why the BdE was also opposed to increase interest rates during the late 1920s; it would only increase CSB banks' reliance on its Lombard facility and lead the BdE to approach the fiduciary limit. In fact, as the Government and the BdE discussed the first increase in the Discount Rate in 1928 in order to curb the increase in the money supply and stem the depreciation of the peseta, contemporaries were aware that it would have little, if any, effect[87]. This was indeed the case. Figure 2.16 shows the evolution of banks' deposits created by monetizing public debt with the BdE (figures are averages for all CSB banks and 95% confidence intervals). When a bank drew from the credit account that it held with the BdE against public debt, this was reflected as an increase in the bank's interbank liabilities. Thus Figure 2.16 shows a jump in the share of interbank liabilities that takes place in 1928q4. This is reflecting banks' readjustment of their portfolio as soon as the monetary policy stance of the BdE changed after five years of unchanged interest rates. In turn, Figure 2.17 shows that this increase in interbank deposits was not the consequence of a general increase in interbank

activity among CSB banks (i.e. some banks borrowing from other banks or via inflows of foreign depositors), as total interbank assets remained flat over the whole period, while interbank deposits (which included BdE credit against public debt) increased markedly from 1928q4. CSB banks reacted to the BdE rate change by drawing from their credit accounts. At first, right after the rate change, banks stored 80% of these newly created deposits in cash, which then were used to keep expanding credit, almost uninterruptedly, until April 1931 (Figure 2.13).

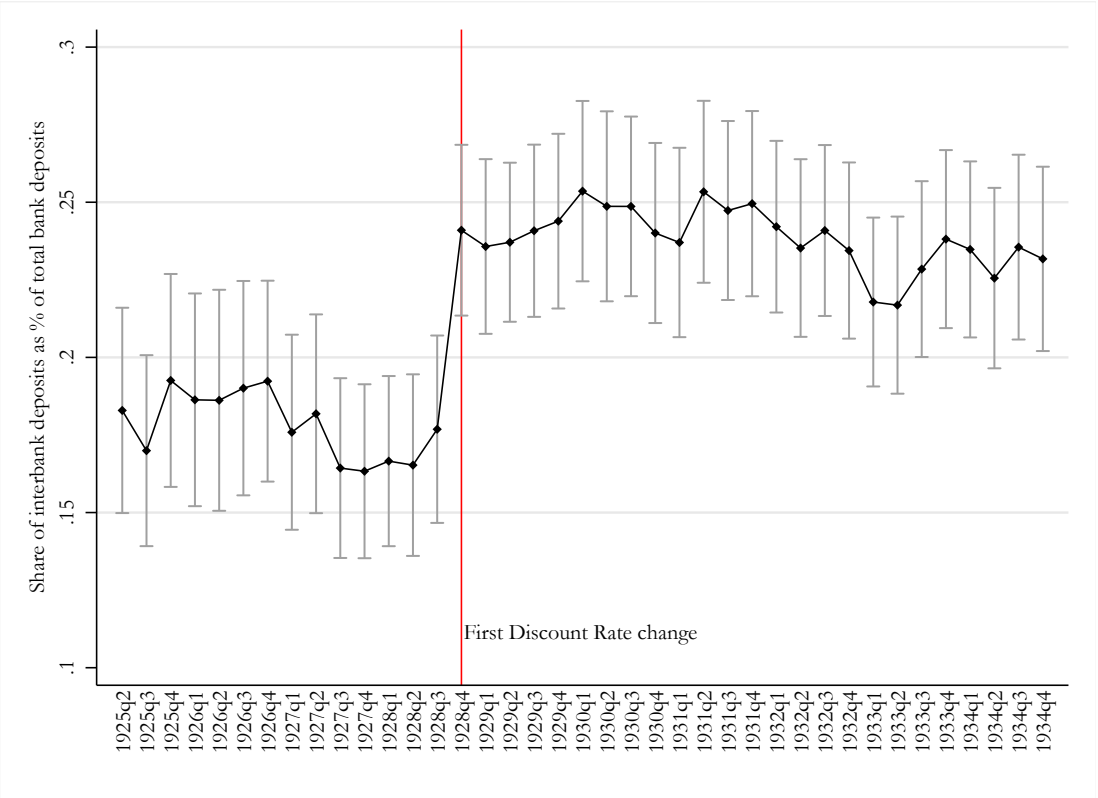


Figure 2.16: Share of deposits at the BdE in banks' total deposits (1925q1-1934q4)

Source: own calculations using *Boletines del Consejo Superior Bancario*.

The impact of the main monetary policy tool that the 1921 Banking Law had made available to the BdE and the Government to control credit–interest rates–was ineffective. Alternative tools were not used; quantitative instruments were not mobilized. It is important to acknowledge that the reduced size of the rate changes calls into question the extent to which one could expect them to be effective. However, there are two important points to highlight here. First, the reaction of non-CSB banks suggests that these rates had an effect on those bank that could not rely on an automatic access to the Lombard facility of the BdE and thus were exposed to higher rates that they could not pass-through to their

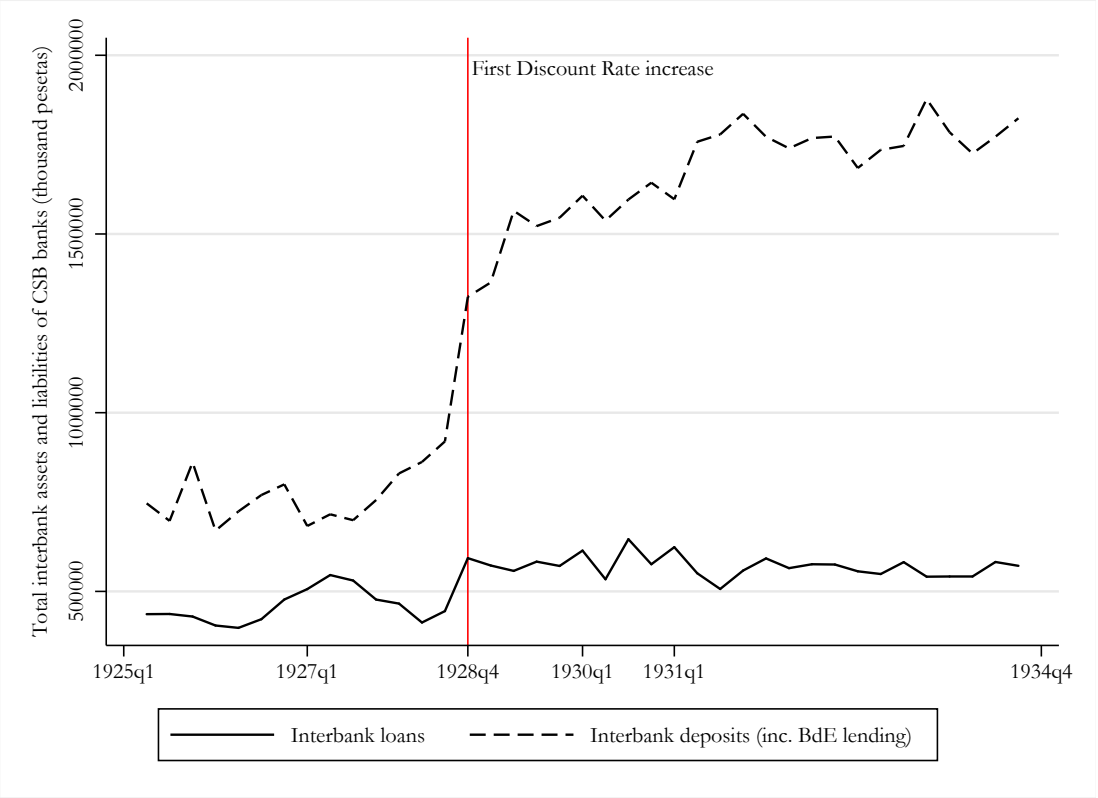


Figure 2.17: Total interbank assets and interbank liabilities, CSB banks (1925q1-1934q4)

Source: own calculations using *Boletines del Consejo Superior Bancario*.

borrowers from 1928. Second, the size of CSB banks' reaction to 1928 in the form of increased reliance on the BdE Lombard facility after the first rate change (even if it was timid), shows how the automatic access to that lending facility countered any effect of rate changes in bank lending. In sum, this section's results confirm contemporaries' concerns that the 1921 Banking Law, while ensuring CSB banks remained liquid, prevented Spanish monetary authorities from controlling the evolution of credit aggregates and to curb the collapse of the exchange rate from 1928.

2.7 Conclusion

After the First World War, and in need of funding its budget deficits, the Spanish Government established a system of "indirect monetization" of public debt through which banks were allowed to borrow from the BdE using government bonds. The latter had to accept these loans. This regime was embodied in

the 1921 Banking Law, which came as a reaction to the failure of the Banc de Barcelona in 1920. Policymakers in charge of the Ministry of Finance interpreted this crisis as a liquidity crisis and thus exploited the need to ensure bank liquidity as a way to make sure issuances of public debt could be successful. In doing so, the Law outsourced monetization from the central bank to the banking sector. As fiscal authorities failed to balance the budget almost in every year during the Interwar Period, banks started accumulating public debt that they used to borrow from the BdE. This revealed the time-inconsistency problem in which fiscal authorities placed themselves in 1921: fiscal policy became incompatible with attempts at reducing pressure on the exchange rate via reduced bank lending.

When the peseta started falling rapidly in 1928, the Government tried to stop the depreciation. All attempts were fruitless because with one hand the government persuaded the BdE to raise its interest rates, while with the other it kept running fiscal deficits that could be monetized by the banking sector. As a result of the 1921 Banking Law, monetary policy tools that were supposed to be monetary authorities' device to "command the credit of the nation" (as the BdE Statutes read), were deemed ineffective and proved an obstacle to stop the fall of the peseta and the concomitant discredit of the government's economic program. The regime that the 1921 Banking Law had put in place made it very hard to reconcile macroeconomic policy objectives (fiscal and monetary). On the one hand, the Government pushed for higher Discount rates to defend the exchange rate. On the other, it had to borrow to finance growing deficits and loans to stabilize the currency, which it did by issuing public debt that banks could automatically pledge at the discount window of the Banco de España. This is not to say that raising interest rates would have been enough, on its own, to stop the fall of the peseta (especially since they were raised mildly). Rather, the conclusion of this chapter is that when it passed the 1921 Banking Law, the Government introduced a time-inconsistency problem and made monetary policy dependent on the future path of fiscal authorities. While the Law was successful in granting fiscal authorities with a reliable source of deficit funding (monetization), this revealed incompatible with the objective of stabilizing the peseta in the late 1920s. This, as the next chapter shows, pushed monetary authorities to resort to other means to stop the fall of the peseta, which ended up increasing the vulnerability of the banking sector to an eventual liquidity shock caused by a run on its retail deposits.

2.8 Appendix

2.8.1 The model

In order to estimate a loan equation that depends on monetary policy indicators and a set of other factors, I use the model developed by Stein (1998) and Ehrmann et al. (2003), which solves the optimization problem of a profit maximizing bank[88]. In this model, bank i balance sheet is defined as:

$$L_i + S_i = D_i + B_i + C_i \tag{2.2}$$

where L_i, is the volume of loans, S_i are securities, D_i the secured deposits, while B_i represents the non-secured deposits. C_i is the capital of the bank. The representative bank develops its business in a monopolistic competition, and faces a demand for loans that is described by:

$$L_i^d = -a_0 \cdot r_{L,i} + a_1 \cdot y + a_2 \cdot p \tag{2.3}$$

Bank-individual loan rate is denoted by $r_{L,i}$, while y is aggregate real output and p is the price level. All the coefficients in Equation 2 are assumed to be positive. The model further assumes that the amount of loans is related to capital and that securities' holdings are also proportional to deposits[89].

$$C_i = k \cdot L_i \tag{2.4}$$

$$S_i = s \cdot D_i \tag{2.5}$$

In turn, D_i, which are secured but non-interest bearing deposits, are subject to a demand function. This is determined by the interest rate of a risk-free asset, r_s. The model further assumes that, since banks don't remunerate deposits, they can't influence the amount held at the representative bank, D_i. This is considered to be exogenous and will therefore drop after the monetary authority tightens monetary policy, without the representative bank being able to influence this. The demand for deposits is therefore a negative function of the policy rate.

$$D = -b_0 \cdot r_s \tag{2.6}$$

While it is not true that banks didn't remunerate deposits in Spain at the time, it is not too an heroic assumption that they couldn't influence the distribution

of deposits. The top 6 banks held 51% of the deposits, and since they were part of CSB, the interest they paid on them was capped. It is plausible to assume that the vast majority of the rest of CSB members were also respecting the CSB deposit remuneration cap and that the non members could not influence this rates. Therefore, in Equation 5 the demand for deposits is described and, b_0 is positive; hence banks' deposits drop when the central bank raises the interest rate. Despite banks lose reserves when monetary policy tightens, they also get funds from other sources (namely B_i in Equation 1). This funding is not secured and banks need to pay interest on that. They pay $r_{B,i}$, which is the risk-free rate, r_s plus a premium based on the banks' perceived health.

$$r_{B,i} = r_s \cdot (\mu - c_0 \cdot x_i) \tag{2.7}$$

Where x_i is the a bank's health signal, which lowers the unsecured finance premium, as c_0 is positive and the whole parenthesis is non-negative. The individual bank decision on how much it can pay for unsecured funds is determined by Equation 6; in fact, it will not be able to obtain funding if pays less than $r_{B,i}$. If pays $r_{B,i}$ or more, the bank will be able to obtain all necessary funds. However, as the bank maximizes profits and $r_{B,i}$ enters its profit function as a cost (Equation 7), it will never be willing to pay more than $r_{B,i}$. Therefore, the representative bank's profit function takes the following form. Income is earned by lending (loans to corporates, families and other banks) and yields from securities (bills discounted, stocks, public debt).

$$\pi_i = L_i \cdot r_{L,i} + S_i \cdot r_s - B_i \cdot r_{B,i} - \Psi_i \tag{2.8}$$

where Ψ_i captures bank-specific costs, such as administration costs, personnel, etc[90]. To solve the bank's maximization of profit, Equations 1 to 5 are inserted in Equation 7, resulting into:

$$\begin{aligned} \pi_i = L_i \cdot \left(-\frac{1}{a_0} \cdot L_i + \frac{a_1}{a_0} \cdot y + \frac{a_2}{a_0} \cdot p \right) + s \cdot D_i \cdot r_S \\ - ((1-k) \cdot L_i - (1-s) \cdot D_i) \cdot r_{B,i} - \Psi_i \end{aligned} \tag{2.9}$$

from which, after setting first order conditions for maximization, and inserting Equation 6 (which determines the funding premium each bank has to pay for

unsecured funds) we obtain the loan equation that will be estimated:

$$L_i = \frac{a_1}{2} \cdot y + \frac{a_2}{2} \cdot p - \frac{a_0 \cdot \mu \cdot (1-k)}{2} \cdot r_S + \frac{a_0 \cdot c_0 \cdot (1-k)}{2} \cdot x_i \cdot r_S - \frac{a_0}{2} \cdot \frac{\delta \Psi_i}{\delta L_i} \tag{2.10}$$

The model assumes homogeneous loan demand, and therefore there are no differences between customers' reaction to interest rate hikes. This is not a plausible assumption in the case I have at hand, as it is very likely that CSB member banks captured the more risk-averse depositors and the non-member banks were mainly recipients of less risk averse depositors. This makes sense if we think about the distinction that I am stressing between member and non-member banks. Information about CSB member banks was much more readily available, and the public ought to have been more aware that they were (at least theoretically) under the surveillance of the CSB and that they could access BdE liquidity by pledging public debt. On the contrary, non-member banks, which were by nature smaller and characterized by sometimes not even carrying the name "bank", could be the recipients of depositors that could expect higher returns on their investments but at the same time less control and transparency over these banks' operations. If we assume (as I do) that this applied to interbank relations as well (because interbank deposits in non-member banks were significantly lower than in CSB member banks), this would ultimately imply that non-member banks would face a higher premium on their interbank funding (i.e. the parameter c_0 for the same observable characteristics of a given bank should be smaller for member banks). From the point of view of the econometric analysis, this implies that ideally the two groups ought to be treated separately. In other words, I can assume homogeneous demand among CSB member banks and among non-member banks, but assuming it at the aggregate level might be too strong an assumption. To deal with this problem, I run the estimation with and without dummies for CSB membership, which has the same effect as if I divided the sample in two, but it allows me to interact this dummy with other bank characteristics as size, capital ratios and liquidity ratios[91]. The model is finally estimated in first differences:

$$\Delta \ln(Loans_{it}) = a_i + \sum_{j=1}^{l} b_j \Delta \ln(Loans_{it-j}) + \sum_{j=0}^{l} c_j \Delta MonetaryPolicy_{t-j} + \\ + \sum_{j=0}^{l} d_j \Delta \ln(GDP_{t-j}) + \sum_{j=0}^{l} e_j \cdot CPI_{t-j} + fCharacteristic_{it-1} + \\ + \sum_{j=0}^{l} g_{1j} Characteristic_{it-1} \cdot \Delta MonetaryPolicy_{t-j} + \\ + hControls_{it} + \varepsilon_{it} \tag{2.11}$$

where $i = 1, ..., N$, with N being the number of banks and $t = 1, ..., T$ with T being the number of quarters. For the first term on the right-hand side of the equation, l is the number of lags of the dependent variable (log of loans in pesetas) included in the estimation, and accordingly L_{it} is the end-of-quarter lending portfolio of bank i in period t (lending to corporates and families). The model is estimated with four lags of the dependent variable. The monetary policy measure is represented by r_t, which is the log of BdE discount rate. Economic output and prices are captured in GDP_t and CPI_t, respectively. Bank-specific characteristics (size, liquidity, capitalisation and membership) are captured by the vector x_{it} and, as explained above, they are interacted with the monetary policy variable. As detailed below, I include a number of controls in the regression (the Madrid stock market index, foreign central banks' discount rates and a banking crisis dummy for the 1931 crisis). As in all standard estimations in the literature (Angeloni et al., 2003; Gambacorta and Marques-Ibañez, 2011), the model allows for fixed effects, which are captured by the intercept a_i which is specific for each bank.

2.8.2 BdE rate changes: 1928-1931

19 December 1928

As *ad hoc* interventions in foreign exchange markets kept failing, the Government increased the pressure on the BdE to use the discount rate to stop the depreciation of the peseta (Martín-Aceña, 1984). The discount rate had been held constant for five years (Figure 2.4). Both the BdE and the rest of banks opposed strongly to increases in the discount rate, but after negotiations, the Government managed to

persuade the BdE to increase to change its rates three times between December 1928 and July 1931. After the appreciation of the peseta during 1927, in the first months of 1928 concerns emerged that speculation against the currency could be starting to cause a reversal. The Minister of Finance (Mr. Jose Calvo Sotelo) contacted the CSB in May and asked whether banks had noticed intentions of foreign speculation against the peseta[92]. Representatives of the main Spanish banks responded that foreign banks also held large deposits in pesetas, which made them skeptical about a *"genuine foreign interest in the drop of the peseta"*. That said, in a later meeting in July, they recognized that given the Federal Reserve increase in the discount rate earlier in the year, US banks were withdrawing positions in Europe and that *"this might also be reflected in Spain, because given the higher rates that are offered there, it is normal that money might be scarce here"*[93].

Discussions about the increase in the discount rate started in mid-December. By then, the peseta had already depreciated 10% against Sterling from April 1927. On the 15th of December, there were already rumors in the Madrid Stock Exchange that the BdE would raise its discount rate, although not about the size of the hike[94]. The BdE held an extraordinary meeting on the 18th of December in which—agreeing with the initiative of the Minister of Finance—decided to raise the interest rate for all its operations by half a percentage point. The BdE opposed the rise initially but accepted it, claiming that it was *contrary to the general interests*[95]. Martín-Aceña (1984) pointed to the strong opposition of the banking sector to the rate hike, as it *"warned against the unfavourable effects that this would have for the industry and the trade sectors"*[96]. In Madrid, one of the top six banks and a very frequent discounter at the BdE, Banco Urquijo de Madrid (BUMA), considered that the rise in interest rates would cause a contraction in credit. The bank argued that was unnecessary and claimed that *"Spanish banks are absolutely contrary to the increase, as it would damage the interests of the country's economy"*[97]. Another top bank, Banco de Bilbao (BBIL), considered that the rate hike was unjustified and that affected the stock market negatively[98]. Despite the disagreement between the Government, and the banking sector (including the BdE), the official discount rate for CSB-member banks was raised from 4.0% to 4.5% on the 19th of December. The Lombard rate was also increased by 0.5%.[99]

Banks' concerns with an overall contraction in credit following the increase in the discount rate did not materialize. As Figure 2.13 shows, short term credit

was not reactive to the rate hike, while bank loans seem to have reacted slightly, but continued to expand strongly afterwards. In fact, the slight drop in bank loans is driven by only two banks (BHAM and BUMA); the rest of the banking system continued to expand lending without reacting to the rate hike. Figure 2.16 helps understanding why: the effects of the rate hike were countered by CSB banks by increasing their liabilities with the BdE through advances against public debt. Figure 2.16 shows the evolution of interbank deposits as a percentage of all deposits; the connecting dots are means and the vertical bars are 95% confidence intervals. When a bank pledged public debt as collateral at the BdE, this was reflected as an increase in its interbank liabilities. Thus the jump in the share of interbank liabilities then is reflecting banks' readjustment of their portfolio as soon as the monetary policy stance of the BdE changed after five years of unchanged interest rates. In turn, Figure 2.17 shows that this increase in interbank deposits was not the consequence of a general increase in interbank activity among CSB banks (i.e. some banks borrowing from other banks), as total interbank assets remained flat over the whole period, while interbank deposits (which included BdE credit against public debt) increased markedly from 1928q4.

This raise was transmitted to the market discount rate of banks almost immediately. For example, Banco Urquijo increased its discount rate by half a percentage point to all operations the same day[100]. Other important banks followed. The Banco de Vizcaya raised its discount rate by the same amount on the 28th of December as *a response to the raise of the discount rate of the BdE' and applied it to all its operations*[101]. The fact that it was not clear if finally the rate would be raised by a full percentage point did increase the impact of the decision. In general, short term market rates reacted to the BdE decision[102]. After six years of progressive decline in market rates[103], the reaction to the first move of the BdE can be clearly seen. From an average market discount rate of 5.0% in 1928, after the BdE raised its rate, the discount rate in Madrid and Barcelona moved up to 6.25% in average, and remained high until 1932, when the BdE started loosening again.

In fact, as shown by Figure 2.13, for most of the year 1928, *"conditions in the market were exactly the same as in 1927"*[104]. According to contemporary observers, large banks appeared to have less pressure to adjust their loan portfolio than smaller banks[105]. Referring to the changes in the discount rate, in January 1930 the Finance Minister wrote a piece in *El Economista*, in which he argued

that in Spain, *"experience has shown that the variations of the discount rate have very scarce influence in the market"*[106]. The limited impact on the market was a cause of concern at the time, as *"there was the risk that that the raise in the official rate might not be followed by the free market, as it seems that there is plenty of pesetas in the money market"*[107].

18 July 1930

The second raise in the interest rate was much more anticipated and came in after the peseta had already lost nearly half of its value against Sterling. On the 16th of July, the Finance Minister approached the BdE and suggested that, *"in order to improve the exchange rate of our currency"* and to cause a *"healthy contraction in credit that would attract foreign capital"* the official discount rate and the rest of interest rates should be raised by 0.75 percentage points[108]. The BdE and representatives of the CSB argued that it *"would not be possible to implement the measure because it would not exert any of the positive effects that it was attributed and would not attract foreign capital"* because foreign interest rates were higher[109]. A day later, disregarding the previous answer, the Minister signed a Real Order and the BdE raised interest rates in 50 basis points in all its operations, thus leaving the official discount rate at 5.0%, the highest level since 1921[110]. The BdE acceded with *"a feeling of deep pain"*, and added that this would affect the clients of the bank, which at the time was synonymous to CSB banks.

It is interesting to see that as opposed to the previous raise, in this case there were no rumors of a further unexpected increase. On the other hand, similarly to 1928, the public was not certain about the size of the hike. The impact of this rate raise on market rates was much smaller, although it still caused the average market discount rate to rise again. In Madrid, banks raised their discount rates *only because the BdE rose its discount rate*[111]. Banks' concerns with this second rise was less marked than in the previous one. For instance, there is not a single mention to this rate hike in the minutes of Banco Urquijo de Madrid (BUMA), and in the minutes of Banco de Bilbao (BBIL) the opposition to the rise was not comparable to that in 1928. By July 1930, and as Figure **??** shows, CSB banks had already subscribed to the gold bonds issued by the Government in January 1930, which is reflected in the increase in their holdings of foreign liabilities. Because of that, CSB banks could not be under increasing liquidity pressure by a

change in the discount rate or the Lombard rate if they could rely on pledging these bonds when needed at a constant rate of 4% (Figure 2.4), that is 2 percentage points below the bonds' nominal yield. Attempts by the Government to stop the fall of the peseta by raising interest rates were incompatible with its own way of financing other means of stabilizing the exchange rate. As Figure 2.13 shows, banks continued to expand their loan portfolios despite the rate hike.

08 July 1931

The third and final rate hike took place in early July, along with the BdE intervention as lender of last resort between April and September 1931 (see Chapters 3 and 4 for details). In this case, the BdE made two moves. The first was a 50 basis points hike in the discount rate, which was decided on the 7th of July and enacted a day after[112]. The Government and the BdE, *"given the evolution of the fiduciary circulation (...) decided to raise in half a percentage point the official rate for all operations with the exception of those that involve public debt"*[113]. In addition to that, the government cut the 100bp reduction in the discount rate for CSB-member banks by 50bp. Therefore, the overall increase in the discount rate for CSB members was of 100bp (50bp from the actual rate hike plus 50bp from the reduction in CSB-members rate). Hence, the official discount rate was raised to 6.0% for CSB-member banks, which marked the highest official rate since mid-nineteenth century and the steepest increase since the summer of 1914. In this occasion, the Lombard rate was not changed (Figure 2.4).

In sum, changes in the discount rate aimed at stopping the depreciation of the currency seem to have had–despite the warnings from the banking sector and the BdE–little effect on bank's loan schedule. The first increase in the discount rate, which was the first in five years, signalled that monetary policy might become tighter in the following years, as the defense of the exchange rate became a priority for the Government. However, banks compensated this move by resorting to their holdings of public debt which allowed them to draw from their credit accounts with the BdE without having to readjust their loan portfolios.

2.8.3 Size, capitalisation and liquidity normalized measures

Following Ehrmann et al. (2003) and Gambacorta and Marques-Ibañez (2011), all measures of banks' characteristics are normalized with respect to their average across all banks in the sample, in order to get indicators that sum to zero over all bank observations. The average of the coefficient associated to the interaction between a bank characteristic and the monetary policy indicator is zero and therefore, its coefficient can be interpreted directly as the overall monetary policy effect on loans. The measures are constructed as follows:

$$Size_{it} = \log A_{it} \frac{1}{N_t} \sum_i \log A_{it} \tag{2.12}$$

$$Capitalisation_{it} = \frac{C_{it}}{A_{it}} - \frac{1}{T} \sum_t (\frac{1}{N_t} \sum_i \frac{C_{it}}{A_{it}}) \tag{2.13}$$

$$Liquidity_{it} = \frac{L_{it}}{A_{it}} - \frac{1}{T} \sum_t (\frac{1}{N_t} \sum_i \frac{L_{it}}{A_{it}}) \tag{2.14}$$

where A_{it} are bank i's total assets, L_{it} is the sum of cash, 3-month bills of exchange and public debt and C_{it} is the sum of capital and reserves. T is the number of quarters and N the number of banks.

2.8.4 Comparison with other estimates in the literature

	Banks' characteristics						
	Monetary Policy	Size	Capitalisation	Liquidity	Banks	Period	Country
My estimation (CSB members)	0.021**	0.044***	1.031***	1.218***	130	1927q1-1932q3	Spain
My estimation (non-members)	-0.252***	-0.007	2.550***	-2.713***	130	1927q1-1932q3	Spain
Ehrmann et al. (2003)	-1.969***	-0.063	2.304	8.106***	312	1994q3-2000q3	France
Ehrmann et al. (2003)	-0.526***	-0.044	-0.469	3.936***	2689	1994q1-1998q4	Germany
Ehrmann et al. (2003)	-1.510***	-0.214*	-11.304	3.986**	210	1991q1-1998q4	Spain
Hernando and Martínez-Pages (2003)	-2.579*** /-1.566***	-0.132	-6.045	3.403*	216	1991q1-1998q4	Spain
Gambacorta (2005)	-0.825***	0.079	3.616	2.278***	587	1986q4-2001q3	Italy
Benkovskis (2008)	-0.039	0.014	0.544	0.092	23	1998q2-2006q4	Latvia
Juurikkala, Karas, and Solanko (2011)	0.08	-0.100	0.270	1.520	1475	1991q1-2007q1	Russia
Gambacorta and Marques-Ibañez (2011)	-1.569**	0.641***	8.888*	-6.959	1008	1999q1-2009q4	15 countries

Table 2.6: Comparison of the estimation results with the literature on monetary policy transmission

2.8.5 Stock market index

All regressions include an index of the Madrid Stock Market as a control. This is needed because non-CSB member banks could be more likely to hold riskier portfolios that included a larger share of particularly riskier or volatile stocks. By including this, I try to rule out the possibility that their lending was only reacting to stock exchange variations and not to monetary policy tightening. I elaborate the index by averaging the price of the 27 main shares quoted in Madrid, which I collected from the *Boletin Oficial de Cotizaciones, Bolsa de Madrid*. I use end-of-quarter observations for the period 1922q4-1934q4. Table 2.7 contains a summary of the shares I use. The resulting index is plotted in Figure 2.18 along with an alternative annual index elaborated by Hoyo Aparicio (2007) as a benchmark for comparison. The index is included in the estimations in logs.

Table 2.7: Shares included in the index and type of firm

Name	Sector/good produced
Banco de España	Bank
Banco Hipotecario	Bank
Banco Central	Bank
Banco Español de Credito	Bank
Banco Hispano Americano	Bank
Telefonica preferentes	Communications
Cooperativa Electra Madrid	Electricity
Hidroelectrica Española	Electricity
Mengemor	Electricity
Compania Sevillana de Electricidad	Electricity
Union Electrica Madrilena	Electricity
Chade	Electricity
Union Espanola de Explosivos	Explosives
La Union y el Fenix Espanol	Insurance
Altos Hornos de Vizcaya	Iron and steel
Los Guindos	Mining
Duro Felguera	Mining
Minas del Rif (portador)	Mining
Ferrocarriles Andaluces	Railways
Ferrocarril Madrid-Zaragoza-Alicante	Railways
Ferrocarriles del Norte	Railways
General Azucarera	Sugar
Compañia Arrendataria de Tabacos	Tobacco monopoly
Metropolitano de Madrid	Transport
Tranvias Electricos de Granada	Transport
Madrileña de Tranvias	Transport
Construccion Naval	Transport

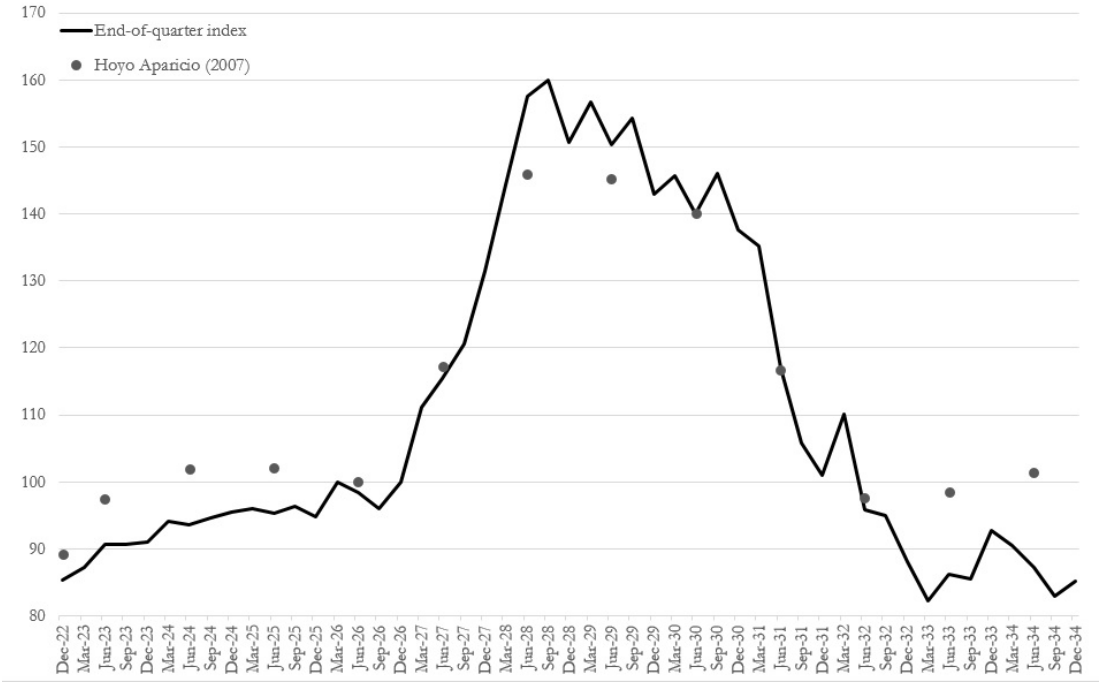


Figure 2.18: Madrid stock market index, 1922-1934

(1926q1=100)

2.8.6 Information about banks used in the estimation

Table 2.8: Banks' names, membership and size of loan portfolio (thousand pesetas, in 1928q3)

	Name	Code	Loans	Assets	Loans/assets
CSB Members	Antonio Gonzalez Egea	AGEG	1387	4892	28%
	Alfaro y Cia	ALYC	752	1243	60%
	Aramburu Hermanos	ARAH	1791	7360	24%
	Arnus Gari	ARGA	30620	84030	36%
	Banca Arnus	BAAR	38751	97012	40%
	Banco Asturiano de Ind. y Com.	BAIC	15480	24454	63%
	Banco de Aragon	BARA	18106	59553	30%
	Banco Aragones de Credito	BARC	18856	56030	34%
	Banco de Avila	BAVI	1462	4357	34%
	Banco de Badalona	BBAD	495	2752	18%
	Banco de Bilbao	BBIL	3543	25587	14%
	Banco Calamarte	BCAL	1550	47122	3%
	Banco Castellano	BCAS	10059	76795	13%
	Banco Central	BCEN	102959	788151	13%
	Banco Coca	BCOC	4172	20228	21%
	Banco del Comercio	BCOM	107	176	61%
	Banco de Castellon	BCTL	19589	142842	14%
	Banco Comercial de Tarrassa	BCTR	3438	32953	10%
	Banco de Credito de Zaragoza	BCZA	1348	8562	16%
	Banco Español de Credito	BECR	216481	1050512	21%
	Banco de Felanitx	BFEL	2332	40543	6%
	Banco de Gijon	BGIJ	181	694	26%
	Banco Gijones de Credito	BGJC	197	839	23%
	Banco Guipuzcoano	BGUI	18659	136789	14%
	Banco Hispano Americano	BHAM	11252	64263	18%
	Banco Hispano Colonial	BHCO	538	2865	19%
	Banco Herrero	BHER	1769	5133	34%
	Banco Internacional de Ind. y Com.	BIIC	9948	27598	36%
	Banco de La Coruña	BLAC	23983	124794	19%
	Banca Lopez Quesada	BLOQ	4800	14169	34%
	Banca Marsans	BMAR	3015	9894	30%
	Banco Mercantil	BMER	7655	38239	20%
	Banco Minero Industrial de Asturias	BMIA	111940	739968	15%
	Banco del Oeste de España	BOES	42449	108194	39%
	Bosch i Codola	BOSC	10924	41160	27%
	Banco de Palafrugell	BPAL	1414	5374	26%
	Banco Pastor	BPAS	221702	1361684	16%
	Banco del Penedes	BPEN	43516	213653	20%
	Banco Popular de Leon XIII	BPLE	33980	162271	21%
	Banco Popular Previsores Porvenir	BPPP	213392	1087362	20%
	Brunet y Cia	BRUN	22788	65975	35%
	Banco de Sabadell	BSAB	31163	177489	18%
	Banco Sainz	BSAI	43182	201808	21%
	Banco de Santander	BSAN	1051	1601	66%
	Banco de Soller	BSOL	4884	20658	24%
	Banco de San Sebastian	BSSE	29852	182332	16%
	Banco de Torrelavega	BTLV	3400	6509	52%
	Banco de Tolosa	BTOL	1320	31983	4%

Table 2.9: Banks' names, membership and size of loan portfolio (thousand pesetas, in 1928q3)

	Name	Code	Loans	Assets	Loans/assets
CSB Members	Banca Tusquets	BTUS	11652	78979	15%
	Banco Urquijo Catalan	BUCA	26652	120988	22%
	Banco Urquijo Guipuzcoano	BUGI	18953	65364	29%
	Banco Urquijo de Madrid	BUMA	148881	515783	29%
	Banco Urquijo Vascongado	BUVA	17409	102774	17%
	Banco de Valencia	BVAL	13689	68356	20%
	Banco de Valls	BVLS	0	1290	0%
	Banco de Vitoria	BVIT	1701	3638	47%
	Banco de Vizcaya	BVIZ	73	959	8%
	Banco de Zaragoza	BZAR	3225	17539	18%
	Credito Balear	CBAL	710	6876	10%
	Credito y Docks de Barcelona	CDBA	1468	3259	45%
	Clemente Fernandez	CLEM	24515	87691	28%
	Credito Navarro	CNAV	20807	95480	22%
	Corrales Hermanos	CORR	9593	37171	26%
	Dorca y Cia	DORC	952	3406	28%
	Francisco Lopez	FLOP	0	1165	0%
	Fomento Agricola de Mallorca	FOAM	451	1902	24%
	Gonzalez del Valle y Cia	FONZ	4834	20373	24%
	Garriga Nogues y Sobrinos	GARR	4341	7756	56%
	Hijos de Clemente Sanchez	HDCS	963	7515	13%
	Hijo de Manuel Peral	HDMP	3593	20378	18%
	Hijos de F. Mas Sarda	HDMS	98	1941	5%
	Hijo de Dionisio Puche	HDPU	448	2775	16%
	Hijos de M. Rodriguez Acosta	HMRA	410	4403	9%
	Hernandez Mendirichaga y Cia	HMYC	2384	27257	9%
	Hijos de Olimpio Perez	HOLI	7276	26786	27%
	Herrero Riva y Cia	HRYC	4591	12639	36%
	Hijos de Simeon Garcia y Cia	HSIM	1800	11178	16%
	Hijos de S. Ulargui	HSUL	229	1753	13%
	J. Merle Sucesores SA	JMER	757	2263	33%
	Jover y Cia	JOVE	1853	5131	36%
	Jose Saez Azores	JSAE	12252	41293	30%
	La Vasconia	LAVA	12493	86352	14%
	Lazard Brothers	LAZA	52511	91263	58%
	Matias Blanco Cobaleda	MBCO	13007	33345	39%
	Moreno y Cia	MORE	5749	11492	50%
	Nietos de P. Martin Moreno	NIET	2146	10902	20%
	Orzaes y Gomia	ORZA	283	1206	23%
	Padro Hermanos	PADH	231	2682	9%
	Pedro Lopez e Hijos	PELH	1571	20405	8%
	Perxas, Dorca y Cia	PERX	1979	4586	43%
	Sindicato de Banqueros de Barcelona, SA	SBBA	18	868	2%
	Smith, Horn y Cia	SHYC	11013	23052	48%
	Soler y Torra Hermanos	SOLE	4465	34252	13%
	Viuda de Antonio Vicens	VAVI	1503	6092	25%
	Viuda e hijos de Carlos de Casas	VHCC	257	2798	9%
	Vicente Trelles	VICE	28	469	6%

Table 2.10: Banks' names, membership and size of loan portfolio (thousand pesetas, in 1928q3)

	Name	Code	Loans	Assets	Loans/assets
Non-members	A. Clara Turon	ACTU	60	496	12%
	Anacleto Carbajosa Prieto	ANCP	1228	10851	11%
	Banco Agrario de Baleares	BABA	5494	44088	12%
	Banco de Burriana	BBUR	18804	38695	49%
	Banco Cooperativo del Norte de España	BCNE	4026	16872	24%
	Banco del Escorial	BESC	149	3540	4%
	Banco de Ferrerias	BFER	266	46138	1%
	Banco de Figueres	BFIG	1471	7078	21%
	Banca Lopez Bru	BLOB	29759	91774	32%
	Banco Mercantil Agricola	BMAG	2823	21953	13%
	Banca March	BMCH	10042	45526	22%
	Banco de Menorca	BMEN	1172	30165	4%
	Bonifacio Cano y Cano	BONI	0	1399	0%
	Bartolome Payeras	BPAY	8564	53438	16%
	Barcaiztegui y Maestre	BYMA	481	1486	32%
	Fomento Agricola, Ind. y Com. Lluchmajor	FAIL	411	1403	29%
	Francisco Castaner	FCAS	2896	26284	11%
	Felix Ribera	FELI	1012	4540	22%
	Herederos de Antonio Ridruejo	HARI	398	1185	34%
	Hijo de Dominguez	HDOM	614	1869	33%
	Hilario Dominguez	HILD	685	2837	24%
	Hijo de Juan Ferrer	HJUF	1107	10055	11%
	Luis del Pueyo y Pueyo	LPYP	684	1573	43%
	Matias Crespo Muñoz	MACM	42	218	19%
	M. Bruguera Sabater	MBRU	0	1823	0%
	Miqueletorena, Muguiro y Cia	MIQU	72	2896	2%
	Narciso Obanza	NARC	318	4680	7%
	Raimundo Perez Perez	RAPP	0	1762	0%
	Segundo Gimenez	SEGG	3869	11360	34%
	Solomon Benhamu	SOLO	1095	3115	35%
	Union Iberica Mobiliaria e Inmobiliaria	UIMI	8300	11885	70%
	Viuda de Esteban Rodriguez Silva	VEST	942	4279	22%
	Viuda de Jose Delmuns	VJDE	46	419	11%
	Viuda de M. Sargatal	VMSA	2571	8764	29%

The limits to lender of last resort interventions in emerging economies: evidence from the Gold Standard and the Great Depression in Spain

3.1 Introduction

When most European countries returned to the gold standard during the second half of the 1920s, they limited their central banks' room for lender of last resort (LLR) interventions during banking crises. In such circumstances, monetary authorities had a hard choice to make: they could limit emergency liquidity assistance to the amounts compatible with their convertibility rules or they could ensure they provided enough assistance for the banking sector to overcome liquidity shocks. The first might imply allowing for the banking system to undergo severe liquidity pressure, while the second might force them to suspend convertibility (Eichengreen, 1992). This trade-off implied that prioritizing exchange rate stability was a major cause of banking crises during the Great Depression, contributing to the deflationary dynamics of the 1930s (Bernanke and James, 1991; James, 2002). At the same time, this meant that central banks in countries that suspended gold-convertibility had much more room to act (Eichengreen and Sachs, 1985; Grossman, 1994). Spain is commonly used as an illustration of this trade-off, as it operated an currency that was not convertible to gold. Accordingly, conventional accounts argue that Spain avoided the Great Depression by never being on the gold standard (Temin, 1993; Reinhart and Rogoff, 2009).

This chapter revisits Spanish banking developments in the 1930s, with a specific focus on the 1931 financial crisis. I use detailed and newly collected archival evidence from the Banco de España (BdE) and the banking sector. In particular,

I argue that the actual policy options available to Spanish monetary authorities were very limited. Because of rapid currency depreciation and growing currency mismatches in the banking system, Spain lost its monetary independence and ability to implement a fully-loaded lender of last resort intervention in 1931. Monetary authorities only regained command of monetary policy once capital controls were introduced. This delayed the intervention and limited its scope, and helps understand the sharp contraction in bank lending and economic activity that took place after April 1931. The interpretation provided in this chapter contrasts significantly with the traditional account. Using the macroeconomic trilemma framework, the literature on the Great Depression usually depicts Spain as having deliberately forgone the exchange rate stability granted by a gold standard in exchange for room for discretion in monetary policy (and free capital mobility). Instead, I argue that the Spanish experience during 1931 supports recent research that questions the actual existence of a macroeconomic trilemma for emerging economies and suggests that policy options are more frequently limited to a dilemma: regardless of the exchange rate regime, when the monetary policy stance changes in the center country (the main creditor), room for monetary policy autonomy is possible only once capital controls are in place (Farhi and Werning, 2014; Rey, 2015).

In fact, during the Interwar Period, Spanish policymakers only accepted a floating exchange rate as long as the peseta remained relatively stable or appreciated due to capital inflows (1923-1927), reflecting their aim at the reputation that came attached to a *strong* currency at the time (Eichengreen, 1992; Straumann, 2010). This trend, however, ended as soon as the international reversal of capital flows gained momentum after 1928 (Accominotti and Eichengreen, 2016). As soon as the peseta began to fall rapidly between 1928 and 1931, the trilemma boiled down to a dilemma. Exchange rate stability and a peg to gold emerged as superior policy goals (Sardà, 1936; Vandellós, 1936; Velarde, 1968; Martín-Aceña, 1984). Because of that, Spain was not exempt from other countries' limitations in dealing with the 1931 financial crisis, as policymakers faced very similar constraints to countries on gold. My argument is supported by new archival evidence that combines bank-level data on bank borrowing from the the BdE's discount window during the critical months of 1931 with balance sheet data also at the bank level. This allows me to track major changes in the BdE's lending operations at a daily frequency and couple them with bank balance sheets in order to assess the evolution of liquidity and bank portfolios during and after the crisis.

The main finding of the chapter is that when a large number of depositors panicked following the proclamation of the Second Spanish Republic in April 1931 and banks started losing deposits, Spanish monetary authorities fell prey to the vicious cycle of a "third-generation" currency crisis.[114] In this context, LLR interventions in emerging economies tend to be less effective than in core, developed economies, because monetary authorities are unable to accommodate the high demand for liquidity denominated in domestic currency without severely affecting the exchange rate and contributing to the ongoing reversal in capital flows (Calvo, 2006). Similar to what Germany, Austria or Hungary suffered also in 1931, the combination of bank and currency problems aggravated the crisis and reduced policymakers' room to act (James, 1984; Schnabel, 2004a; Temin, 2008; Schubert, 1991; Macher, 2018). In this sense, the Spanish experience is not dissimilar from the general experience in debtor countries during the Great Depression, as the threat of capital flight put monetary authorities between a rock and a hard place (Wolf, 2008). Comparing bank deposit losses and the liquidity assistance provided by the BdE, I show that because of the limitations outlined above, monetary authorities fell short of providing banks with sufficient liquidity assistance. This limitation was especially binding when banks suffered the sharpest liquidity shocks in April and May. As a result, despite demand for credit continued to exist, banks that were affected by the bank run contracted lending. Banks that were unaffected continued to lend. I also find that banks that obtained more liquidity assistance from the BdE called back less loans, suggesting that, within its limits, the intervention of the BdE worked in the right direction. These findings suggest that, within its limitations, the LLR intervention conducted by the BdE worked in the right direction. Moreover, they also suggest that willingness to lend did not disappear overnight for banks that could overcome or were not affected by the liquidity shock. However, monetary authorities were limited in how much liquidity they could provide to ailing banks and a sharp contraction in aggregate lending could not be avoided.

The micro bank data analysis conducted in this chapter produces strong parallels with the Central European twin crises of 1931 in the importance of the feedback loop between banking and currency problems, but it also holds similarities with the case of the United States during the Great Depression. My findings are in line with the literature that describes banking crises of the 1930s in the United States as caused by a sharp liquidity shock that had its origins in a gen-

eral contagion of panic, affecting both *healthy* and *unhealthy* banks (Friedman and Schwartz, 1963; Calomiris and Gorton, 1991). Although Richardson (2007) found a role for both liquidity and solvency problems in explaining bank failures during the 1930s and Calomiris and Mason (1997) found that in the case of the Chicago panic of 1932 banks that failed had weaker fundamentals than those that survived the Depression, more recent work by Carlson (2010) suggests that the liquidity shock caused by the contagion of panic did indeed exacerbate the Depression by eliminating viable alternatives (other than closure) for troubled banks. Endogenous liquidity problems were also highlighted as a determinant of the sharp contraction in bank lending in the United States during the Depression (Postel-Vinay, 2016).

The Spanish experience in 1931 provides an interesting case study of the effects of a bank run that had little to do with depositors' perception of bank fundamentals, despite there were important vulnerabilities in the banking sector. Consistent with contemporary narrative accounts, I find that the only predictors of bank-level deposit losses during the bank run that started in April 1931 are specific political and social developments and an increase in hoarding, but not observable bank fundamentals. In a similar vein to what Bernanke (1983) and Anari et al. (2005) described for the banking panics in the United States during the Great Depression, my results show that even once hoarded cash returned to banks after the panic subdued, it was parked into safe liquid assets and lending to the non-financial sector did not recover, thus highlighting the persistent effect of sharp liquidity shocks among affected banks. That depositors do not seem to have observed invidivual-bank fundamentals when withdrawing deposits does not mean that bank fundamentals played no role in the crisis. Monetary authorities were very concerned about growing currency mismatches in the banking system, and this delayed and limited their intervention. Therefore, even if weak bank fundamentals do not seem to have played a role in determining depositor behavior in Spain in 1931, they were definitely present in the banking sector at the time, and conditioned the policy reaction to the crisis. However, in contrast to the case of the United States, Germany or Austria, where bank failures were a central feature of the 1930s banking crises, my findings show that even in the absence of widespread or large bank failures, the contraction in bank loans was sharp and permanent.[115]

Monetary authorities in emerging markets face severe problems dealing with

banking crises, as these usually take place along balance of payments problems and rapid currency depreciation. Therefore, LLR interventions in emerging economies tend to be less effective than in core economies, because central banks are unable to accommodate the higher demand for liquidity denominated in domestic currency without severely affecting the exchange rate and contributing to an often already ongoing reversal in capital flows (Calvo, 2006). This can cause costly withdrawals of credit lines to the private sector. So far, Spain has been depicted as having avoided the Depression because of the inconvertibility of the peseta. New evidence provided in this chapter shows that non adherence to gold-convertibility was not a sufficient condition for escaping financial troubles during the Great Depression.

The rest of the chapter is organized as follows. Section II reviews the literature on the Great Depression in Spain and relates it to the one on twin crises. Section III explains the limits to the LLR intervention. Section IV describes the new data sources used and Section V conducts an empirical approach to the determinants of the 1931 bank run as well as to the consequences of the limitations faced by monetary authorities. Section VI concludes.

3.2 The Gold Standard and the Great Depression in Spain

3.2.1 Revisiting tradition

Conventional accounts of the Great Depression argue that Spain managed to *escape* it. As the only country that operated an inconvertible currency–the peseta– Spain had two advantages over countries on the Gold Standard. First, thanks to the depreciation of the peseta that started in 1928 Spain avoided the deflationary pressures that plagued most countries (Choudhri and Kochin, 1980; Temin, 1993). Second, when a bank run ensued in 1931, the BdE would have been able to lend freely at banks' demand as it was not subject to the strictures of a gold-convertible currency (Tortella and Palafox, 1984; Reinhart and Rogoff, 2009). In addition, since Spain did not experience widespread bank failures during the 1930s, it is commonly coded as not having suffered a banking crisis in 1931 (Bernanke and James, 1991; Grossman, 1994). First, I review the evolution of the main macroeconomic variables in order to show the depth of the economic contraction in Spain. Second, I highlight the fact that the previous account underestimates

that Spain did not experience a banking crisis in complete isolation, but coupled with sharp deterioration in the balance of payments and a currency crisis. Accordingly, I review the limitations imposed by the dynamics of twin crises in emerging economies, especially when the banking sector plays a fundamental role.

This section provides contrasting evidence.[116] Between 1931 and 1934, the Spanish economy accumulated a GDP loss of 13%, defined as the deviation from the pre-crisis growth trend (Betrán et al., 2012). Figure 1.1 shows that between 1929 and 1933, Spain fared much worse than countries that devalued in the autumn of 1931 (UK, Denmark, Norway, Sweden) and than countries that remained on gold (e.g. Belgium, Italy or Switzerland). In fact, Eichengreen and Mitchener (2003) find a very sharp contraction in their credit composite indicator for Spain, which is comparable to the one experienced by Germany or the United States. More recent and higher frequency estimates of monthly economic activity provided by Albers (2018) reveal a similar picture: the recession in Spain was severe, and as long-lasting as in many countries on gold. Other measures of economic activity tell exactly the same story; private investment and bank lending collapsed in 1931 (Figure 3.1).

The country was also affected by the reversal in international capital flows that took place during the late 1920s and early 1930s (Accominotti and Eichengreen, 2016; Betrán and Pons, 2018). After the strong capital inflows due to its neutrality during the First World War, capital abandoned the country during 1920-25. In 1926 and 1927, following international trends, capital inflows returned. This short lived episode ended when accumulated current account deficits coupled with capital outflow from 1928 (Betrán and Pons, 2018). As a result, the peseta started depreciating rapidly from 1928 (Figure 3.2). The depreciation of the peseta certainly explains higher comparative inflation rates during the late 1920s vis-à-vis countries on gold, as Choudhri and Kochin (1980) argued. But when deflation became a worldwide concern in the early 1930s, Spain suffered a drastic appreciation of the real exchange rate versus Sterling and the US Dollar (Figure 3.3). By mid-1932, Spanish authorities pegged the peseta to the French Franc, overvaluing the exchange rate and importing deflation (Martín-Aceña, 1984). Given the international depression, pass-through from exchange rate to domestic prices seems to have been limited: imports contracted by 40% between 1931 and 1935 (Prados de la Escosura, 2003) and import prices fell by 10% (Instituto Nacional de Estadística, 1934). External demand did not contribute to avoid deflationary

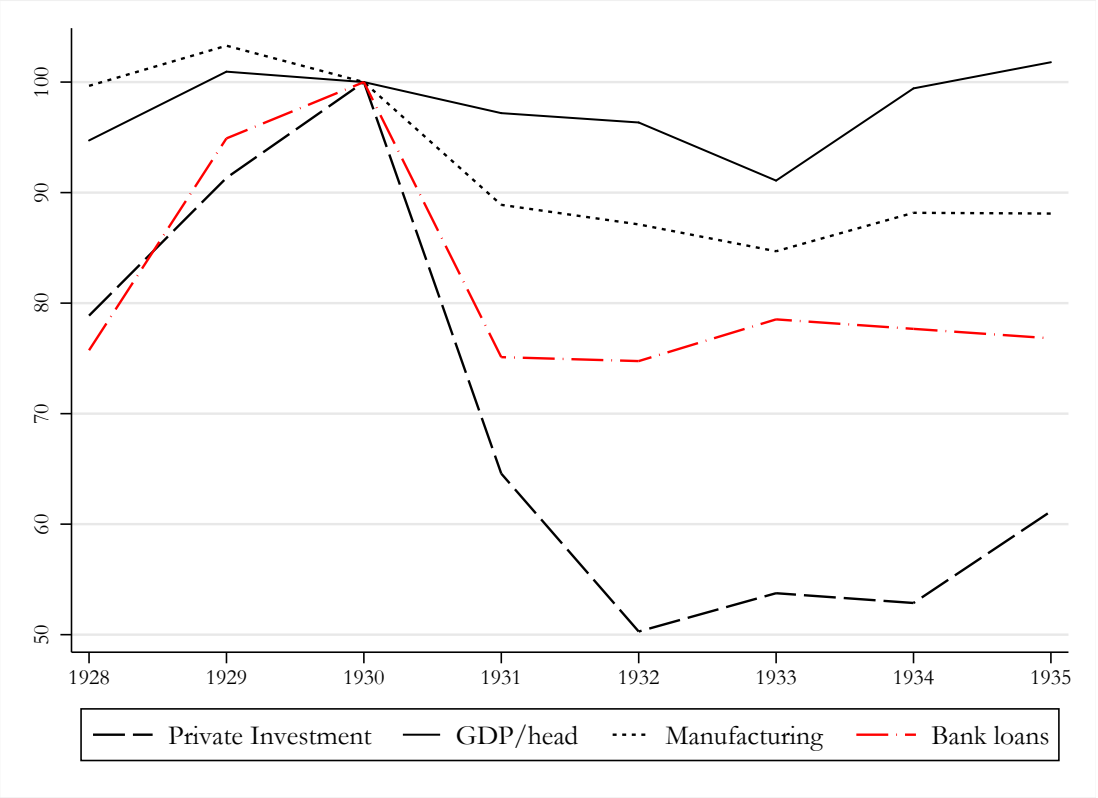


Figure 3.1: Economic activity (1930=100)

Source: Prados de la Escosura (2003) for GDP and its components, *Boletines del Consejo Superior Bancario* for bank lending.

pressures. Exports collapsed by 43% between 1931 and 1935, and data on prices confirms this: the GDP deflator points to a drop in the aggregate price level in 1932 and 1933, mainly driven by the collapse of import and export prices (Prados de la Escosura, 2003). The CPI fell by 3.1% during 1931-35, while WPI fell by 8.2% during the same period (Instituto Nacional de Estadística, 1934; Maluquer de Motes, 2013). This is not surprising for a country in which 80% of exports were commodities (Tena, 2005). Moreover, real interest rates increased during the early 1930s, despite the BdE cut the Discount and Lombard rates from 1932 (Comín, 2012).

3.2.2 Gold Standard *mentalité* and twin crises

Spanish policymakers and the public in general hardly appreciated any potential benefits stemming from a falling peseta. Several Ministers of Finance resigned as a consequence of the depreciation that took place between 1928 and 1931, which contributed to reinforce the link between the evolution of the peseta and

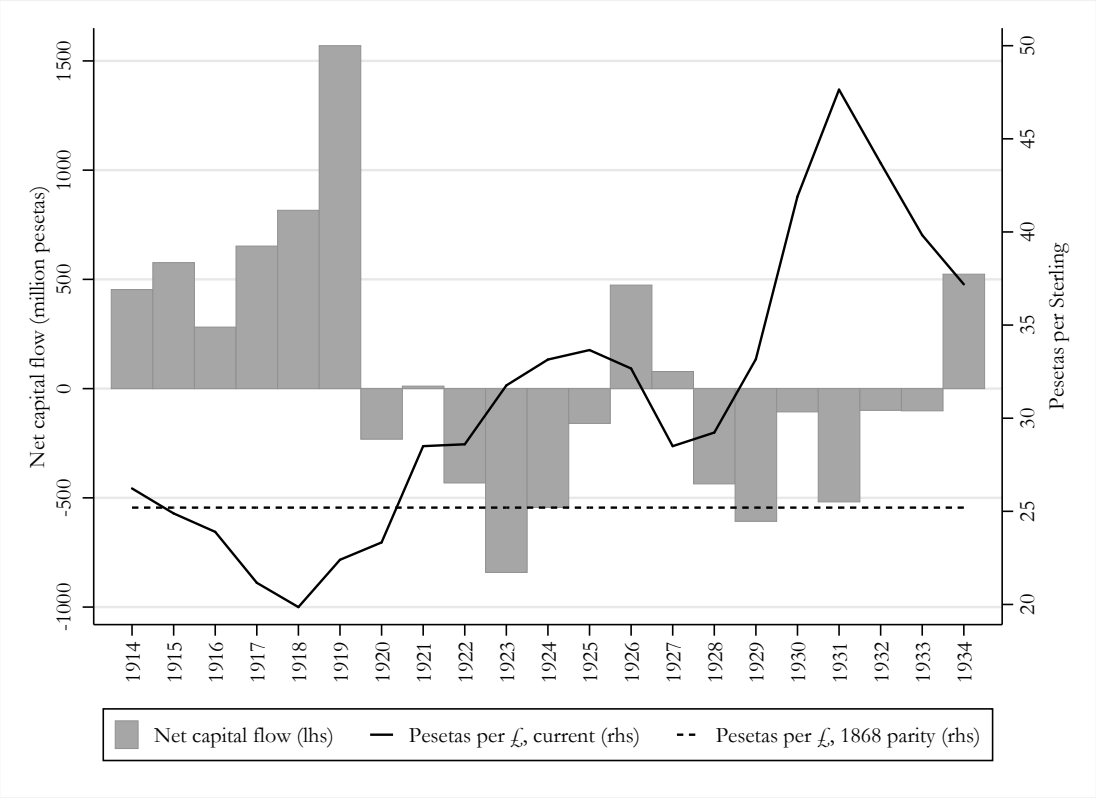
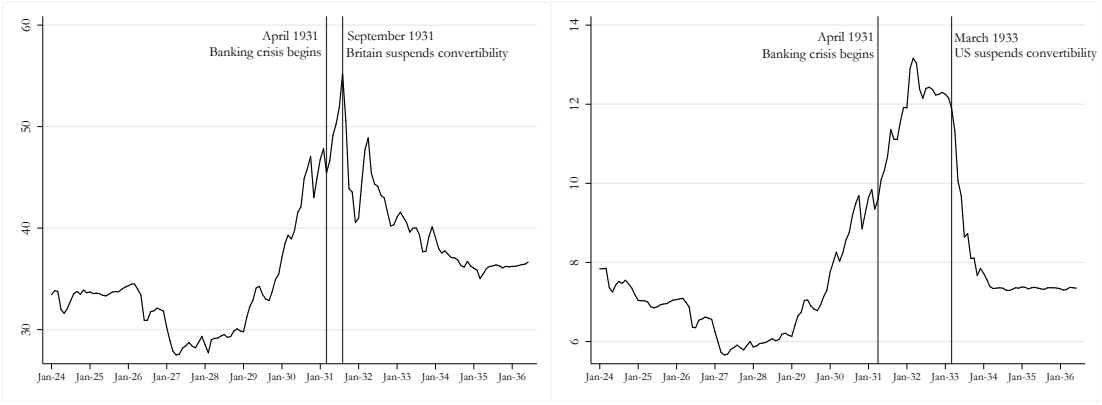


Figure 3.2: Capital flows and exchange rate, 1915-34

Note: million pesetas. A positive amount represents net capital inflows. Capital flows are estimated by adding the current account balance to the changes in gold reserves. Source: own calculations using Betrán and Pons (2018) and Martínez Mendez (2005).

political instability.[117] Currency appreciation was regarded as a sign of prowess, while depreciation was politically unacceptable. Despite gold-inconvertibility of the peseta, Spanish policymakers were bounded by the same intellectual framework of the time, the so-called gold-standard *mentalité* (Eichengreen and Temin, 1997; Mouré, 2002; Straumann, 2010). This is not surprising; the literature on emerging markets and exchange rate regimes shows that policymakers tend to be reluctant to either allow their exchange rate to float freely (Calvo and Reinhart, 2001, 2002), or to reveal the true nature of their policies, highlighting the difference between *de jure* and *de facto* exchange rate regimes (Levy-Yeyati and Sturzenegger, 2005; Urban, 2009). Spain never abandoned the aspiration of a strong, fixed exchange rate and a gold-convertible currency, and enacted policies that pursued these goals. This is not only demonstrated by contemporary debates about joining the Gold Standard, but it was also revealed by specific policy moves when the peseta appreciated in 1926 and depreciated from 1928.[118] Even if attempts at exchange rate stabilization failed repeatedly, they were not innocuous, and eventually reduced monetary authorities' room to act during the



(a) Pesetas per Sterling (b) Pesetas per US Dollar

Figure 3.3: Evolution of the peseta exchange rate (1924-1936)
Source: Martínez Mendez (1990).

1931 crisis.

It is clear from the evidence presented above that by 1931, Spain had been experiencing an ongoing deterioration in the balance of payments and severe exchange rate depreciation. By April 1931, the peseta had already lost 50% of its value against Sterling.[119] Importantly, banking crises in emerging markets rarely happen in complete isolation. Instead they frequently take place along mounting deterioration in the balance of payments (Bordo and Meissner, 2006; Reinhart and Rogoff, 2009). This explains why the provision of emergency liquidity by the central bank can be severely limited. The collapse of the exchange rate feeds back into the already weak banking sector, which is commonly affected by currency mismatches (Bordo, 2006). In this framework, so-called "third generation currency crisis", currency depreciation is reinforced by growing currency mismatches in banks and firms' balance sheets (Krugman, 1999; Chang and Velasco, 2000). In addition, the increase in the domestic currency value of banks' foreign exchange liabilities increases the chances of a bank run. This might happen because depositors fear that banks will be unable to repay deposits, as the depreciation of the currency requires committing an increasing amount of domestic currency to repay debt in foreign exchange. At this stage, the provision of emergency liquidity to the banking sector might have strong drawbacks. Holders of domestic currency will then expect further depreciation as monetary authorities will have to expand the monetary base to provide liquidity assistance to ailing banks, among other things, to meet depositors' demands of repayment. Eventually, both problems feed back to each other and the currency enters a vicious cycle that aggravates the crisis. Policymakers find their hands tied, and eventually have to resort to

capital controls and international assistance, (Kaminsky and Reinhart, 1999). In the extreme, a LLR intervention can lead to "currency substitution" if the public starts switching away from the domestic, depreciating, currency (Calvo and Végh, 1999). In such a scenario, expanding the balance sheet of the central bank to fight an eventual bank run enters into direct conflict with exchange rate stability. The threat and eventual speed of capital flight limits policy options, a problem that core, developed economies do not necessarily experience (Calvo, 2006; Rey, 2015).

It is usually difficult to identify the initial shock that triggers the vicious cycle described above (Kaminsky and Reinhart, 1999; Schnabel, 2004a). Kaminsky and Reinhart (1999) and Glick and Hutchinson (2000) concluded in the context of liberalized capital accounts (in the 1980s), banking crises tend to precede currency crises. However, these findings are somewhat at odds with the effects that rapid exchange rate depreciations can have on banks' balance sheets, multiplying the domestic value of liabilities denominated in foreign currency (Schnabel, 2004a). In fact, there seems to be no strong reason for a domestic bank run if depositors are not aware of banks' currency mismatches. At the same time, if the bank run is triggered by a shock unrelated to banks' currency mismatches, causality can go from banking to currency. The Spanish experience provides an interesting case study because it allows for the identification of a clear exogenous trigger for the bank run: the unexpected results of the April 1931 local elections. Almost overnight, Spain changed from a Monarchy that had sympathized and co-existed with authoritarianism to a democratic Republic. Despite the peseta had been falling since 1928, banks had continued to receive deposits until March 1931 (Figure 3.4). By then, however, currency mismatches in the banking sector had increased substantially (Figure 3.5). As Figure 3.5 shows, between 1928 and 1931, foreign exchange-denominated liabilities in the banking sector (excluding foreign banks) increased from 10% of peseta-denominated loans to 25-30%. In this context, the bank run was the spark that put in motion the "third-generation" dynamics described above, which then delayed and limited the scope of the LLR intervention.

Similar to what Schnabel (2004a) highlighted for the case of Germany, since most of the literature considering the Spanish crisis of 1931 appeared before the development of a theoretical literature on twin crises, the importance of the depreciation of the peseta as a limiting factor to deal with the banking crisis has been frequently overlooked.[120] As a result, the literature has tended to take for

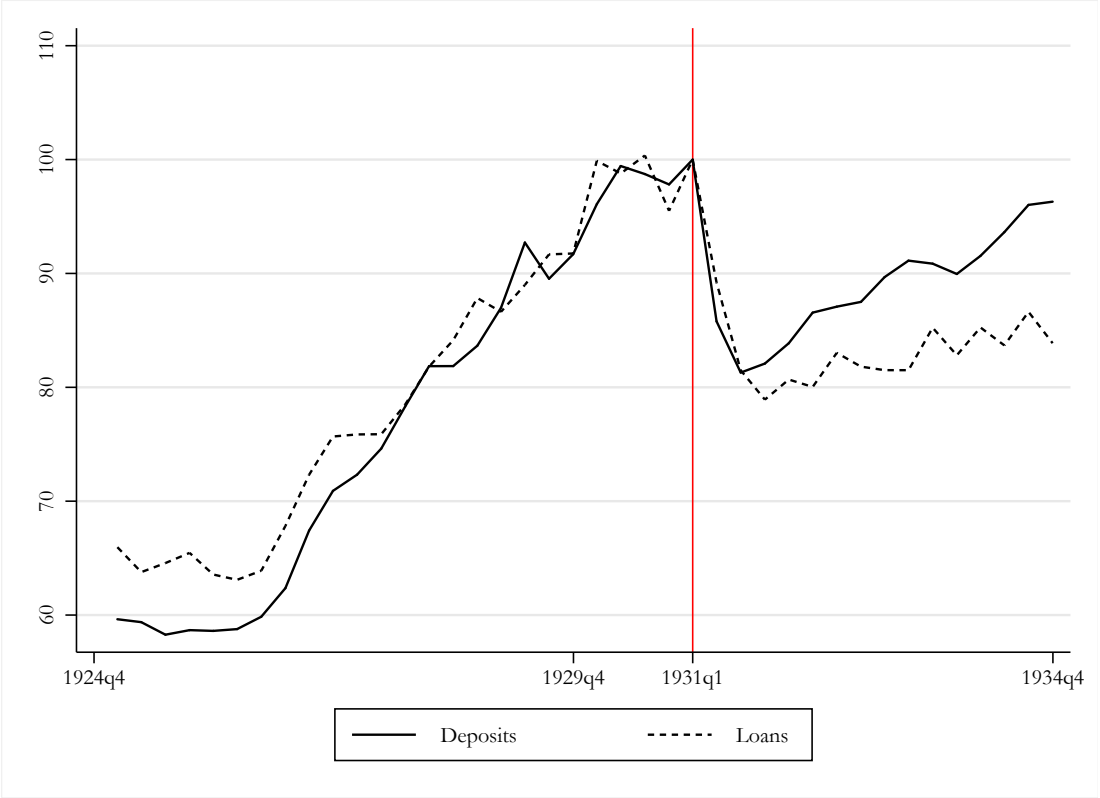


Figure 3.4: Evolution of total deposits and loans (1931q1=100)
Note: deposits and loans in pesetas. Source: *Boletines del Consejo Superior Bancario*.

granted that the BdE could expand its balance sheet without any consideration about the evolution of the monetary base and the exchange rate. However, as it is often the case with emerging markets, monetary authorities' moves were not necessarily credible to the eyes of foreign exchange markets: sharp increases in the monetary base were interpreted by foreign investors as a sign of authorities' inability to deal with the crisis, rather than as a sign of policy boldness. Moreover, the country had been suffering continued capital outflows since 1928 (Figure 3.2), and the expansion of the amount of pesetas in circulation could only operate in the same direction: fueling capital flight. As a result, a large increase in the monetary base could not take place unless strong capital controls were introduced.

The fact that the peseta was not convertible to gold did not imply unlimited room for LLR interventions. The conventional account described above implicitly neglects the fact that the BdE operated a currency that could not be converted to gold, but not a completely fiat currency. Taking the two things as synonyms is misleading.[121] There were limits on how much monetary base could be created, and this depended on the gold–and to a much lesser extent silver–reserve at the

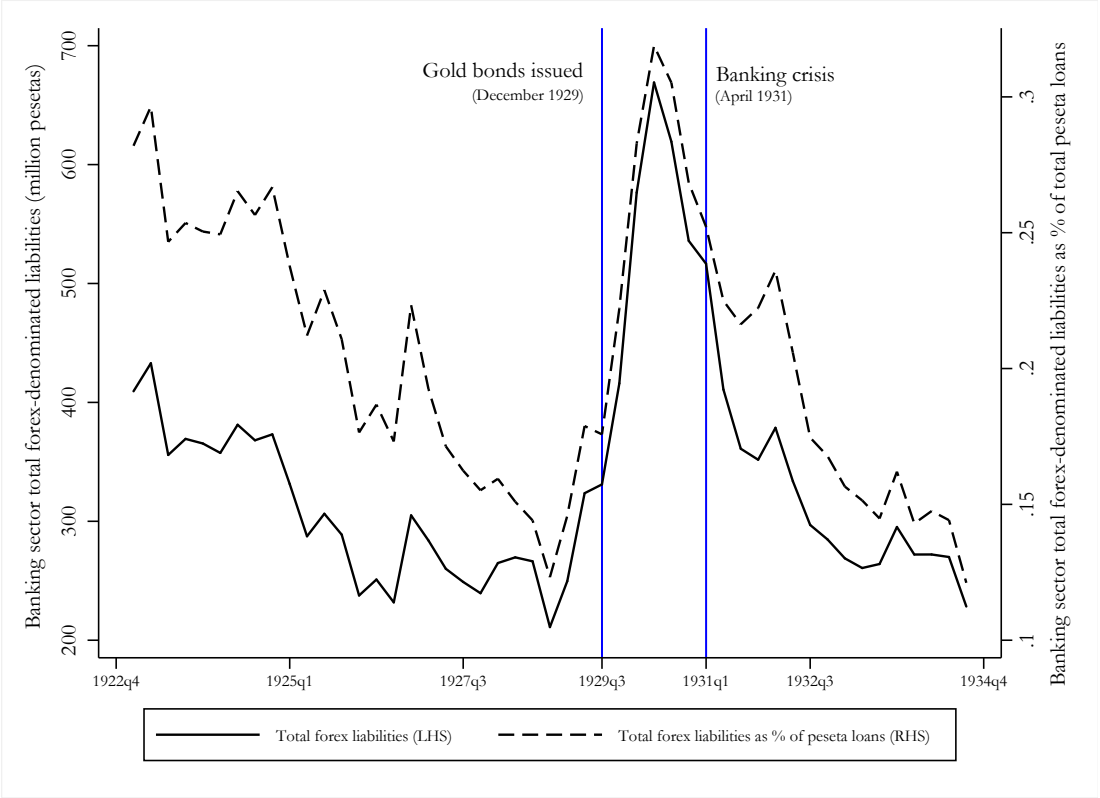


Figure 3.5: Currency mismatches in the banking system
Source: *Boletines del Consejo Superior Bancario.*

BdE (Martín-Aceña et al., 2013). In fact, when the bank run started in April 1931, there was very little room to expand the fiduciary issue to support ailing banks. Another important limitation that is often neglected by the literature on LLR interventions is that a rapid increase in the monetary base to assist the banking system can turn out to be counterproductive. Faced with a reversal in capital flows or the freezing of foreign lending (the so-called "sudden stop" episodes), monetary authorities lacking international reserves have to resort to finance emergency liquidity provision with increases in the supply of domestic currency, affecting both the price level and the exchange rate.

Interestingly, Spain did not lack international reserves. The BdE held the world's fourth largest gold reserve at the time, only after the US, Britain and France. However, already from 1928, all governments failed to persuade the BdE to use gold sales to stabilize the exchange rate, as all parties involved disagreed on the specific stabilization policies and their costs. Hence, on top of balance of payments and monetary constraints, institutional design also played a role in limiting the policy reaction in 1931. This explains why during the crisis, tempo-

rary stabilization of the exchange through gold sales was never a feasible option. As a consequence, assistance to ailing banks could only be provided freely once the provisional Republican Government had imposed capital controls, to ensure that expanding the monetary base would not translate directly into capital flight and further exchange rate depreciation. In fact, Spain was the first country to impose such controls, in the last days of May 1931 (Bernanke, 2000). As I show in the following sections, however, this move took too long to allow banks to overcome the sharp liquidity shock they suffered in the first months of the crisis and contributed to the sharp contraction in credit supply.

3.3 The Banco de España as a constrained lender of last resort

3.3.1 The stabilization of the peseta and "original sin"

By 1931, Spanish authorities had spent three years trying to stabilize the exchange rate (Martín-Aceña, 1984). All attempts failed. Repeated failure not only contributed to the domestic and international discredit of monetary authorities' ability to deal with exchange rate depreciation, but also limited room for action during the 1931 banking crisis. This section provides evidence on how pre-1931 attempts to stabilize the peseta ended up switching currency mismatches from the government to the banking system, strengthening the link between the banking and the currency crisis in 1931. I also show that when banks suffered a sharp liquidity shock from April 1931 there was very little room to provide emergency liquidity assistance. Fiduciary issuing was about to hit its legal maximum, so the expansion of the monetary base to meet banks' liquidity needs was capped. Fearing a vicious cycle from the banking crisis to the currency crisis through accelerating capital flight, authorities took one month and a half to allow for a large increase in the monetary base, which only materialized after the introduction of strong capital controls. Between 14 April, when the bank run started and 29 May, when capital controls became effective, the BdE could not attend all banks' liquidity needs.

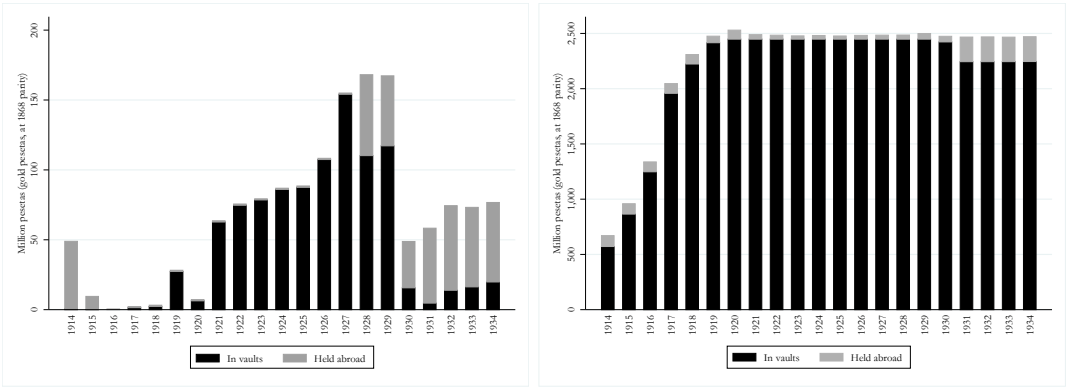
When the Republic was proclaimed on 14 April, the peseta had been falling since 1928 (Figure 3.3). Incumbent politicians and the public in general decried the fall of the peseta. The appreciation that took place in 1926-27 had pushed

dictator Miguel Primo de Rivera and his Minister of Finance José Calvo-Sotelo, to make exchange rate stability the cornerstone of the regime's economic reputation, going as far as tying exchange rate stability to moral and racial considerations.[122] This backfired when capital started leaving the country and the peseta began to fall in 1928. The evolution of the exchange rate became the main reason behind the resignation of several Ministries of Finance (including Calvo-Sotelo) and one of the main factors behind the growing discredit and later resignation of Primo de Rivera (Velarde, 1968; Eguidazu, 1979; Ben-Ami, 2012). Interestingly, in 1929, Primo de Rivera himself regretted that *"when almost a year ago we saw the peseta around 27 per Sterling, national vanity made us dream for some hours about reaching parity with gold* [i.e. the 1868 parity]. *The Gold-Peseta! Viva España! That was more a moral success than an economic one..."*.[123] Some years later, in 1933, Calvo-Sotelo claimed that *"if in 1927 the Government had intervened–our critics claim–it would have been possible to buy foreign exchange in order to create a large reserve. This is not only an ex-post recommendation but also unfair. Monetary interventionism to stop the appreciation of a currency! No. In 1927, no government would have dared doing that"*.[124]

Thus, from 1928, the fall of the peseta and the discredit of the Spanish Monarchy and its different executives (the Dictatorship and later the so-called Softatorship) became strongly interlinked.[125] As a response, in January 1930 the Dictatorship took the last attempt to stabilize the peseta: the issuance of gold bonds. Gold collected would be used to compensate the losses from previous failed interventions, to liquidate the Government's accumulated short term foreign exchange debtor positions, and to intervene in foreign exchange markets to defend the peseta. As in previous occasions, this stabilization plan also failed. However, the way gold bonds were issued and subscribed, had implications for the 1931 crisis, as it tied the hands of the three main actors–the Government, the banking system and the BdE–leaving them with very little room to act.

The Government issued 350 million pesetas in 10-year gold bonds in the first days of 1930. The goal was to liquidate the Government's accumulated short term foreign exchange debtor positions, which had been growing since 1928, when foreign exchange interventions started and failed repeatedly.[126] Gold bonds were very attractive: they paid unusually high yields (6%), were made eligible as collateral at the discount window of the BdE at a rate specially set for these bonds (4%) and carried taxation exemptions. Subscribers of the bonds could acquire

them either with gold (coins or bullion, domestic or foreign) or with foreign, gold-convertible currencies. Coupons were to be paid quarterly in gold-pesetas, which were defined at the parity of 1868, of 25.20 pesetas per Sterling or 5.18 pesetas per US Dollar. They could be serviced in foreign gold coins and in bills denominated in currencies that were convertible to gold. In short, gold bonds were redeemable in foreign exchange at the 1868 parity.[127] Despite previous failed attempts to stabilize the peseta, demand for gold bonds was very strong.[128] Bonds were bought mainly by Spanish and foreign banks, while the BdE ended up not holding any.[129] In practice, in trying to stop the fall of the peseta, the Dictatorship transferred currency and maturity mismatches from its balance sheet to the banking sector's, thus planting the seeds for a twin crisis, were banks to suffer a sharp liquidity shock.[130] Strong demand for gold bonds was interpreted as a signal of solid confidence in the stabilization of the peseta, but the latter continued to fall during 1930, as current account deficits mounted and capital continued to leave the country (Figure 3.2). By the time gold bonds were issued, the peseta traded at 70% of its 1868 parity; just before the proclamation of the Republic in April 1931, it traded at 54%; by September 1931, just before Britain left gold, it traded at 45% (Figure 3.2). The continued depreciation of the peseta made honoring the bonds increasingly expensive for the Government. Even more so as the collapse of international trade caused a fall in foreign exchange revenue at the customs, making it even more costly to service coupon payments in gold-convertible currencies.[131]



(a) Government (b) Banco de España (BdE)

Figure 3.6: Gold reserves, Government and Banco de España (1913-1934)

Note: million gold pesetas (i.e. valued at the 1868 parity of 25.2 Pesetas per Sterling). Source: Martínez Mendez (2005).

Given their attractiveness, the main Spanish banks purchased all bonds the

Government had earmarked for them, amounting to one third of the total issuance. Spanish banks didn't hold any gold themselves, and they held almost no foreign exchange in cash, so they borrowed abroad.[132] They did so by embarking in short-term forward contracts in London (so-called *dobles* in Spain) by which they sold spot pesetas against Sterling, and repurchased them at a term no longer than three months. As long as the peseta did not depreciate rapidly or if foreign exchange markets trusted the stabilization plans of the Government, banks were able to rollover these operations, especially because their access to the discount window of the BdE was not quantitatively limited before April 1931. If the peseta continued to fall, this would cause severe pressure to their balance sheets by increasing their currency mismatches even more, and would leave them unable to repay their lenders in gold or "hard currency". To do so, they might also have to access the discount window of the BdE to obtain pesetas and buy Sterling, thus contributing to existing pressure on the exchange rate. Therefore, by the time the banking crisis started in April 1931, banks were in a very fragile position, as they had rapidly accumulated currency mismatches after several years of lowering their exposure to exchange rate volatility (Figure 3.5).

If one bank suffered a strong liquidity shock, it could, in principle, ask the BdE for liquidity assistance. As long as this happened only to one bank, this would not pose a problem, as a one-off liquidity injection to a single bank would not necessarily trigger a run on the currency or make foreign investors suspicious about the feasibility of stabilization plans.[133] However, when from April 1931 more than 30 banks lost more than 15% of their deposits, the amount of liquidity required by the system was not readily available at the discount window of the BdE. Moreover, as this was coupled with a sharp depreciation of the peseta, Spain fell prey to the "third-generation" currency crisis scenario described above: banks needed liquidity to convert clients' deposits into cash and to rollover their short-term liabilities in foreign exchange. At the same time, the creation of this liquidity caused their currency mismatches to increase, as the public exported capital and demand for foreign currency caused the peseta to fall even more. In turn, rolling over short-term foreign exchange forwards required more liquidity assistance from the BdE.

The BdE had not subscribed to any of the government gold-bonds, and therefore was reasonably isolated from the direct effects from the fall of the peseta. Moreover, it valued its gold reserves at the parity of 1868, so its profits were pro-

tected from fluctuations in the nominal exchange rate. However, when in April banks started losing deposits and turned to the discount window, the BdE faced a binding trade-off between liquidity provision and exchange rate stability. On the one hand, it had to take a conservative stance in the provision of liquidity assistance, as both its own credit risk and the binding quantitative limits on fiduciary issuing made it difficult to satisfy liquidity demand. On the other, the BdE had incentives to be as bold as possible, in order to avoid the deepening of the banking crisis. If it did not provide as much liquidity assistance as banks needed, these risks could materialize. If it provided too much, they could also do so, as capital flight would throw the peseta into a depreciation spiral and add pressure to the same ailing banks. From the very onset of the crisis, the BdE made it known that it would be ready to help banks facing liquidity problems but subject to a certain set of conditions, as it faced limitations on how much assistance it could provide.

Right after the proclamation of the Republic, the BdE acknowledged that:[134]

> *"(...) banks have faced deposit withdrawals that forced them to resort to us, to be able to comply with their clients' demands, by rediscounting bills and using their credit accounts. This has caused circulation to increase (...) and despite the fact that we have enough reserves to allow for larger increases in money circulation and will attend to the petitions that we are required to attend to, the assistance that is provided to private banks must be consistent with their healthy policy and the current circumstances, with the final aim of avoiding an excessive increase in the volume of circulation, and thus affecting the external value of the currency and the price level (...)"*

As much as they mattered, it was not only the exchange rate or the price level that affected the BdE's reaction; it was also worried about its own exposure to credit risk. If the economy entered a severe recession, protested and eventually unpaid bills of exchange could weight on its profits. In general, the BdE had been very conservative in the type of securities it was willing to purchase from banks. Similarly to other central banks at the time, the BdE operated following the real bills doctrine, only discounting bills that represented an underlying real commercial transaction and that were therefore "self-liquidating", and avoiding to discount financial bills[135]. Since bills were accepted directly by the banks that

rediscounted them, counterparty risk appeared, as banks that were selling the bills were under severe liquidity pressure themselves[136]. In addition, banks used public debt as collateral for advances at the discount window of the BdE, so it was also exposed to increased market risk as the market value of the collateral banks used to borrow fell sharply.

While ready to help, the BdE was constrained. It also feared losing gold. Officially, its gold reserve was only at risk if the BdE agreed to use it to join the Government in a stabilization plan that happened to go wrong, something the former had resisted since 1928. Only then, the Government could ask the BdE to cover 50% of the costs of the intervention with its own gold reserve.[137] However, there were also unofficial concerns that equally limited the BdE's intervention. The more the peseta depreciated and the less gold in the Government's vaults, the higher the risk for the BdE of being pushed to use its own gold to defend the currency[138]. As the stabilization of the peseta continued to fail (Figure 3.3) and the Government ran out of gold again (Figure 3.6a), by the end of 1930 gold held at the vaults of the BdE—its shareholders' private property—was the very last reserve that Spanish authorities could use to defend the peseta, although they needed the approval of the board of the BdE.

In October 1930, amid the unstoppable fall of the peseta and unable to get the BdE involved in gold sales to intervene in foreign exchange markets, the Government had sent a delegation of the BdE to meet with representatives of the Bank for International Settlements (BIS) in Paris (Martín-Aceña, 2006). The goal was to ask for a credit in Sterling for the *final* stabilization of the currency. Negotiations continued in London, where Montagu Norman, the Governor of the Bank of England, argued that Spain should use the BdE's gold reserve to stabilize the peseta before asking for external assistance. In fact, Norman believed that news about the BdE mobilizing its gold would suffice to stop the depreciation.[139] Norman's hard opposition to a line of credit failed to understand the high political sensitivity of gold-related issues in Spain (Toniolo and Clement, 2005); the BdE abhorred the idea of mobilizing gold or using it as collateral for international credits.[140] Norman's stance is perhaps better explained by his fears of the potential spillovers of an excessive intervention of the BIS in Spanish affairs:[141] *"the responsibility over a long period of stabilization is a domestic and political question and, judging from past experiences, great difficulties are liable to arise and mistakes are liable to be made, which cannot be assumed by the BIS*

or anybody in that position". Increased political instability in Spain–with the fall of the peseta as one of its main driving factors–implied that the BIS would be regarded as liable for the outcomes of an intervention conducted in a country with a record of political and economic uncertainty. This was a risk that, according to Norman, the BIS ought not to take.

Finally, a solution that satisfied both Norman and Spanish monetary authorities was found. The BdE agreed to ship gold to London as collateral for the BIS stabilization credit (Figure 3.6b). In turn, the BIS acceded to extend the loan, but only after a stabilization plan for the peseta was put on paper by Federico Carlos Bas, then Governor of the BdE. The plan, which had been actually drafted by BIS agent Michel Mitzakis, stipulated that: *"Spain would reform its monetary system by adopting the gold bullion standard, after a transitory phase on the gold exchange standard, at a somehow devalued parity relative to the prewar period"*.[142] On 29 December, the BIS lent £1.5 million to the BdE for a duration of three months, to be fully reimbursed, principal and interest, in one single payment at maturity.[143] The BIS charged 2.5% interest and a 0.125% commission, and the loan was fully collateralized by £1 million in gold bars and £0.5 million in gold coins, deposited at the Bank of England in the name of the BIS. The credit was doubled to £3 million after the three initial months, on 29 March 1931. In addition to the BIS credit, the Government had also approached foreign banks to ask for stabilization loans. This materialized on 26 March 1931, when J.P.Morgan, the Banque de Paris et des Pays Bas and Mendelsshon & Co. opened credit accounts to the BdE with the guarantee of the Government, amounting to 60 millions US Dollars, and to be repaid in 18 months and at a rate of 1.0% above the discount rate of the Federal Reserve Bank of New York.[144] After months of negotiations and a falling peseta, the outcome of the agreement with the BIS and foreign banks and Spain's commitment to join gold, was well received in foreign exchange markets, causing the peseta to appreciate in the very days before the Republic was proclaimed (Figure 3.7).

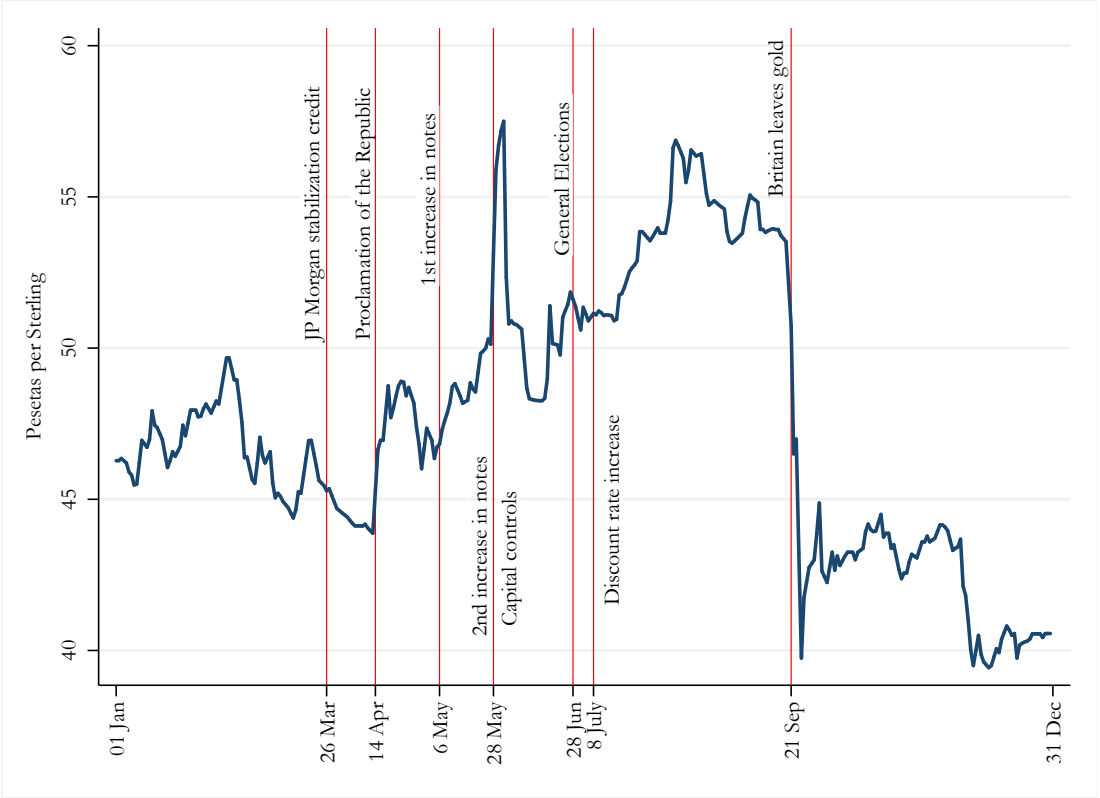


Figure 3.7: Spot exchange rate of the peseta in London (daily)
Source: *Financial Times Historical Archive.*

The appreciation trend ended when the Republic was proclaimed on 14 April 1931 (Figure 3.7). Just as its predecessors, the provisional Republican Government thought that domestic and foreign speculation against the peseta was the cause of its unstoppable depreciation, and wanted to identify its ultimate source before making any clear public statement about a new stabilization plan involving a specific peg (Martín-Aceña, 1984). The main consequence of this was a sudden stop in foreign stabilization loans; international lenders canceled the credits they had opened less than a month before.[145] Foreign creditors claimed that stabilization loans were not supposed to be used for *ad hoc* interventions that deviated from the plan Spain had committed to, so the provisional Government was no longer entitled to the funds. From the very onset of the crisis, Spanish monetary authorities had very little room to defend the peseta in foreign exchange markets.

The situation could only be worsened by the bank run that started just after the proclamation of the Republic, on 14 April 1931. Between April and September 1931, the banking system lost 20% of its deposits (Figure 3.4). The deposit drain started in April, along the political regime change, but did not stop there. It continued in May, following short-lived but violent incidents between

supporters of the ousted Monarchy and the newborn Republic in which a number of churches were burnt down in many provinces. In June, political uncertainty about the General Elections (28 June 1931) and the cancellation of the BIS credit also caused depositors to drain banks. Faced with a sudden drop in their liabilities, banks had to turn to liquidate their assets. They did so by rediscounting bills of exchange with the BdE, pledging public debt and liquidating loans. As reflected by the quote above, the BdE was initially willing to assist banks under pressure, but even if it would have wanted to provide as much liquidity as the banking sector needed to overcome the liquidity shock (without considering any of the risks described above), it could simply not do that. There were binding quantitative limitations on how much fiduciary currency could be issued.

3.3.2 Capital outflows and fiduciary issuing limits

The second important limitation faced by Spanish monetary authorities came from the quantitative cap on how much fiduciary currency could be created. The fiduciary limit (the amount of notes that were not covered by the metallic reserve) could be raised only after the approval of the Government.[146] This implied that just as in gold standard countries, room for LLR was ultimately limited by the metallic cover. Figure 3.8 plots the evolution of notes in circulation as a percentage of the legal maximum as well as daily borrowing from the BdE. On 14 April 1931, the day the Republic was proclaimed, fiduciary notes in circulation were already at 95% of their legal maximum. The limit was timidly raised, coming into effect on 7 May, but banks and firms complained. Banks kept losing deposits and notes in circulation reached the legal limit again. The second raise, this one more ambitious, became effective on 29 May, only once the Government introduced capital controls simultaneously.

One day later, banks approached the BdE to ask for an increase in the note issuing limit.[147] The vice governor of the BdE, Mr. Pedro Pan argued that there were enough notes in circulation and that *"maybe after some days, things will ease"*. This optimism contrasted with the situation banks were facing and, after they insisted on the urgency of the situation, Mr. Pan accepted to ask for approval from the Government.[148] A formal petition was sent to the Government on 18 April 1931, when the BdE had already exhausted its room to lend (Figure 3.8). The provisional Minister of Finance of the Republic, Indalecio Prieto, replied that the increase would not be above 200 million pesetas, over the existing

limit of 5000 million, a tiny 4%. This was also considered enough by the BdE, but banks claimed it was insufficient, and urged the Minister and the BdE to understand that the demands were not from banks themselves, but were the result of clients' liquidation of their deposits.[149] The Government did not move until 5 May. On that day, banks lamented that *"the Minister of Finance, after resisting since 18 April without authorizing the increase in note circulation, finally decided to increase it."*[150] Two days later, on 7 May, the increase became effective, but given its small size, the limit was quickly reached again. Figure 3.8 shows the evolution of banks' daily borrowing from the discount window of the BdE and the evolution of notes in circulation as a percentage of the legal maximum. Right after the first change in the note cover ratio (7 May), which caused the legal limit to increase by 200 million pesetas, notes in circulation started to increase fast as banks continued to face deposit withdrawals. Notes reached the new legal limit of 5200 million pesetas, pushing for further action.

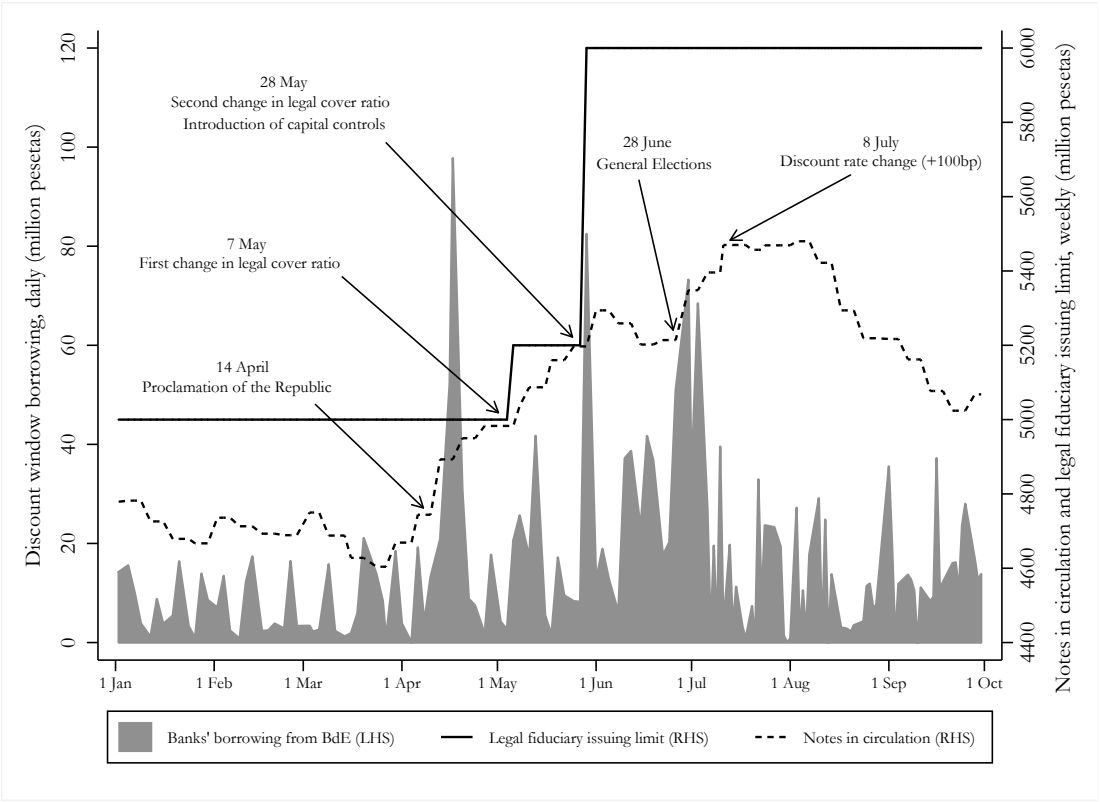


Figure 3.8: Banks' borrowing from BdE, notes in circulation and legal fiduciary issuing limit (January 1931-September 1931)

Source: *Actas de la Comisión de Operaciones del Banco de España* for daily discount window lending and Martínez Mendez (2005) for weekly notes issued.

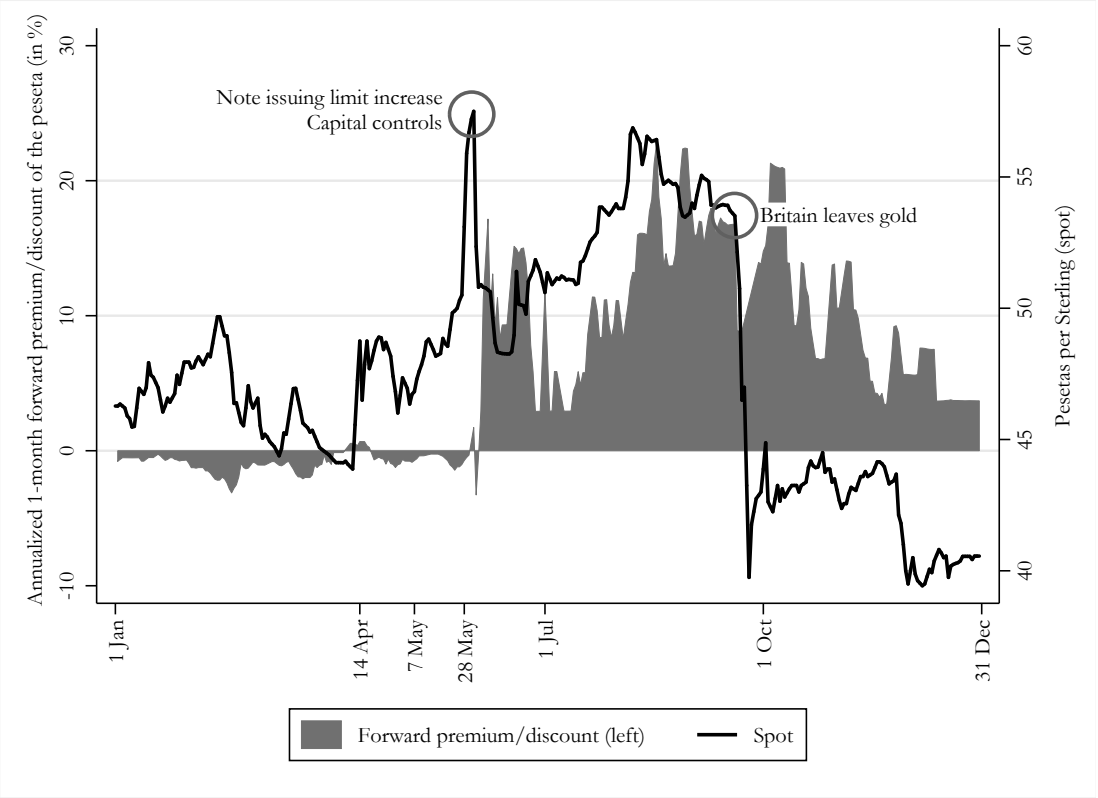


Figure 3.9: Spot exchange rate and forward premium/discount of the peseta in London (daily)

Note: forward rates are annualized 1-month forward premium (-) or discount (+). Source: *Financial Times Historical Archive.*

The provisional Government was extremely concerned with capital flight, and saw the latter as the main link between banking and currency problems. Increasing the fiduciary issuing limit again would imply that banks would receive more liquidity, either to keep rolling over their forward positions in pesetas or to pay back depositors, who would also probably convert their pesetas into "hard currency".[151] This explains why the second, more ambitious increase in the fiduciary note limit, could only come after capital controls were introduced, on 29 May.[152] On this day, the issuing limit was raised to 6000 million pesetas–the legal maximum and a 20% increase from the beginning of the crisis–at the same time that capital controls were introduced through a Decree that limited and banned operations in foreign exchange.[153] As Figure 3.8 shows, right after the second change in the cover ratio, discount window borrowing surged.

Rather than a remedy, the increase in the fiduciary issue was considered a policy failure. The day before signing the Decree that allowed for the increase in fiduciary issue, the Minister of Finance, Mr. Prieto, presented his resignation

to the President of the Republic, Niceto Alcalá Zamora, who refused to accept it. Mr. Prieto considered that the increase in the fiduciary issue limit was evidence of his failure to deal with the crisis (Cabezas, 2005). The next day, when the increase in note issuing was authorized, he then presented his resignation to the Council of Ministries, but he was also *forced* to remain in charge of financial affairs (Velarde, 1983). Moreover, the Government faced the additional problem that increasing the fiduciary limit would be interpreted by the public as a signal that the banking crisis was more severe than initially thought. As a result, it took one month and a half between the moment in which banks had started to suffer deposit withdrawals and the provisional Government authorized for a second, large increase in the fiduciary issuing limit. Interestingly, the Bank of England faced the same problem in the last days of July 1931, but it was allowed to expand the fiduciary issue as early as on 1 August (Accominotti, 2012). That said, the developments in foreign exchange markets once the increase in the fiduciary note issuing limit was authorized in the last days of May, provide some rationale for the delay in allowing the BdE to lend *freely*. Daily quotations of spot and forward pesetas in London are plotted in Figure 3.9.

Until the proclamation of the Republic in 14 April 1931–and consistent with the agreement between the BIS, foreign banks and Spanish monetary authorities– foreign exchange markets had expected the peseta to stabilize and eventually join the Gold Standard after a slight revaluation.[154] The peseta traded at a premium until the local elections of 12 April 1931, when it started trading at a small discount. When the Republic was proclaimed on 14 April 1931, the peseta fell by 11%. Unaware of the severity of the bank run, foreign exchange markets continued to consider the stabilization possible, and the exchange rate remained relatively flat in the second half of April.[155] However, as banks needs for liquidity increased, and a first increase in the fiduciary issue was granted on 7 May, the peseta started falling again.[156] The turning point came when authorities finally acknowledged the scope of the liquidity shock that banks were suffering and allowed for a large increase in the fiduciary limit. The increase in the issuing limit became effective on 29 May, a Friday. Next Monday, the peseta started trading at a heavy discount, and it fell by 14% against Sterling. Far from reassuring foreign exchange markets, the policy reaction needed to deal with banks' liquidity shock was in direct conflict with the stabilization of the exchange rate. Right after the Government increased the note issuing limit and introduced capital controls, the Financial Times read:[157]

> *"Spanish pesetas continued their record-breaking career (...). The increase in the fiduciary issue and the flight of capital are the contributory factors leading to lack of confidence. (...) the swelling of the fiduciary note issue to its legal maximum is an indicator of broken-down confidence, and this must be accentuated by the confession that the government feels bound to authorize further issues, that is, inflation."*

If the provisional Government feared the collapse of the peseta, what tipped the balance and pushed it to decide forgoing capital mobility and allowing the BdE to increase the fiduciary issue? Contemporary accounts show that it was only when the real economy started to suffer the consequences of the monetary shock that the Government was pushed to make a decision. Just before the note issuing limit was raised and capital controls were introduced, *La Epoca* reported that:[158]

> *"Talks are being held about increasing the note issuing limit as firms are suffocating, due to the restriction of credit from banks."*

The restriction of credit was especially hard in the real estate industry, but it was not the only one affected.[159] Members of different industries met with Mr. Prieto, who acknowledged the meeting as a reason behind the expansion of the fiduciary issuing limit:[160]

> *"I received the visit of members of industry, trade and real estate from Madrid, which came to me to explain the truly anxious situation in which they find themselves because of the credit restrictions from banks. Since banks justify the contraction in credit because the Banco de España is restricting rediscount operations, I announce that an increase in note circulation will be authorized. (...) Even though this might not be a pleasant measure, it will contribute to eliminate the current suffocation caused by the restriction in credit."*

Interestingly, the Minister passively acknowledged the *mistake* of having increased the issuing limit only by a small amount earlier in May:[161]

> *"This afternoon I signed the decree authorizing the increase in fiduciary circulation (...) in order to eliminate workers' anxiety, as they are being fired in large quantities because banks are restricting credit. To avoid having to keep pinching small increases in circulation, I authorized for the maximum increase, six million pesetas."*

On the day the issuing limit was raised, *La Libertad* reported that:[162]

> *"Before the issuing limit was raised, banks were cutting down lending because they could not rediscount* [at the BdE]".

As capital controls became tighter and more effective, pressure on the peseta eased. On 2 June 1931 the Government forced exporters to convert their holdings of foreign currency into pesetas and asked banks to submit a statement with their holdings of gold bonds and foreign currency, which would eventually be centralized and liquidated.[163] Crucially, it started negotiating a credit with the Banque de France (BdF) in Paris. The BdF would replace the BIS, whose credit would be let to expire at maturity at the end of June. News about the negotiations with the BdF caused the peseta to appreciate substantially.[164] As negotiations proceeded and banks continued to demand liquidity from the BdE, pressure on the exchange rate returned. Increased political uncertainty before the 28 June General Elections also caused markets to bet on further depreciation. However, the results confirmed the strong support to the provisional Republican Government and contributed to ease the pressure[165].

After the insistence of the newly appointed Governor of the BdE, Julio Carabias, the board agreed to ship £6 million in gold to the Banque de France branch in Mont-de-Marsan (the closest branch to the Spanish border), as collateral for an equivalent credit in Sterling.[166] The loan would be used to nationalize forward contracts in pesetas in London to solve the problem that banks had to service them amid a falling peseta (Martín-Aceña, 1984). Although pressure on the peseta mounted again from mid July (despite an increase in the discount rate) banks currency mismatches eased considerably thanks to the credit obtained from the

Banque de France (Figure 3.5). By the end of August, foreign exchange markets started expecting the peseta to be stabilized at 52 pesetas per Sterling.[167] Meanwhile, the Government kept trying to get the BdE involved. Having acceded to mobilize gold to the Banque de France, the Government tried to increase the pressure for further uses of the gold reserve, although no more gold was shipped.[168] Increased pressure from the Government on the Board of the BdE to use its gold reserve changed market expectations about the future of the peseta, as markets interpreted this as a possibility that gold sales to defend the peseta might take place. This somewhat confirmed Montagu Norman's claims that more than moving gold, it was the willingness to do so what would ease pressure on the peseta.[169] This kick-started an appreciation trend that was reinforced soon enough, when Britain left gold on 21 September 1931 and political stability improved in the second half of October 1931.

3.4 Data

In order to reassess the impact of the 1931 crisis in the Spanish economy as well as banking developments in Spain during the Great Depression, I draw on original and newly collected archival material, both at the quantitative and qualitative level. The new dataset used in this chapter allows to match the two sides of the market—the central bank and the banking system—during the 1931 crisis. Data on daily lending operations from the BdE to the banking sector is obtained from the *Actas de la Comisión de Operaciones del Banco de España*. The second source of data incorporates the banking system. I collect consolidated bank balance sheets on a quarterly basis from 1922q4 until 1934q4 from the *Boletines del Consejo Superior Bancario (CSB)*. The total number of banks affiliated to the *CSB* at the beginning of 1931 was 125, representing 85% of the banking sector's total assets and holding 89% of total deposits. In turn, there were 11 foreign banks and 166 small Spanish banks and bankers that were not affiliated to the CSB, which represented 12% and 3% of total assets respectively. That said, data from the *Actas* detailed above contains only the operations that were conducted at the BdE's discount window in Madrid. This implies that I am only able to couple the two sides of the market for 24 banks, while I can use the full sample when data from the BdE is not involved. However, these 24 banks represent around 65% of the total banking sector assets (Table 3.7), thus making the sample representative.[170] To the extent that it was feasible, I solved these data

limitations by accessing a number of individual bank archives to gather information on their daily borrowing from the BdE from their ledgers. I could do this for three additional banks that borrowed mostly in the BdE's branch in Barcelona, which increases the geographical variation of the dataset.[171] Information about variables used in the empirical estimations and about banks is provided in Tables 3.6 and 3.7 in the Appendix. I also gather and use qualitative information from the Minutes and Meetings of the Board of the CSB (*Actas del Consejo Superior Bancario*), the Minutes of the Board of the BdE (*Actas del Consejo de Gobierno del Banco de España*) and annual reports of different banks. I also use data from an occasional report published in 1935 by the Research Department of the BdE, "*Liquidez Bancaria, 1931-1934*". Where used, other quantitative or qualitative sources are detailed; these are mostly contemporary accounts from economists, politicians and both the Spanish and international financial press.

3.5 The 1931 financial crisis: empirical analysis

How did banks fare during the critical months of 1931? In order to answer this question, this section conducts two empirical estimations. The first explores the determinants of the bank run at the bank level, in order to show that it had little to do with observable bank fundamentals. This helps clarify that the bank run that the political regime change brought about was the initial spark that triggered the "third-generation" currency crisis dynamics. The second estimation shows that liquidity shortages at the bank-level predict the evolution of bank lending and analyses the evolution of bank portfolios after the crisis.

3.5.1 Determinants of deposit withdrawals

Following the boom experienced during the First World War, the Spanish banking sector continued to grow throughout the 1920s. By the beginning of 1931, total bank assets had expanded four-fold compared to 1900, and reached 40% of GDP (Martín-Aceña, 1985). Since the early 1920s, the largest Spanish banks had extended a network of branches. While retaining their headquarters and largest operation centers in Madrid, the expansion aimed at reaching new depositors and at competing with the regional branches of the BdE and local savings banks. In general, Spanish banks maintained high capital ratios, averaging a stable 20% to 25% of total assets during the 1920s and 30s. Consequently,

the banking sector had a substantial cushion to absorb potential losses. As in many late-industrializing countries, the Spanish banking system operated under the so-called "universal banking" model, in which banks mixed the traditional commercial business with equity holdings in their customers and the presence in decision-making organs of non-financial firms.

Banks had expanded in parallel to the strong economic growth that characterized the second half of the 1920s and that lasted until 1930, when economic activity decelerated. This growth was funded mainly through the expansion of domestic deposits, although capital inflows in the late 1920s contributed to the expansion of credit. As a result, Spanish banks had become less exposed to liabilities denominated in foreign currency until 1930, when the Government issued the gold bonds described above (Figure 3.5). Despite the latter caused bank currency mismatches to soar amid a falling peseta, depositors' perception of banks' health remained strong; banks continued to receive deposits and supply credit until 1931. The bank run that started in April 1931 had everything to do with a sharp and quite unexpected political regime change[172]. Following the increasingly unstable and discredited dictatorship of General Primo de Rivera (September 1923-January 1930), General Berenguer's so-called *softatorship* (January 1930-February 1931) and shortly after Admiral Aznar-Cabañas had been appointed President, king Alfonso XIII allowed for local elections. On 12 April 1931, Spain held the first democratic elections in eight years. The results changed the country almost overnight; Spain *"went to sleep as a Monarchy and awoke as a Republic"*, as Admiral Aznar-Cabañas famously put it. Republican parties won by a landslide in almost 80% of the capitals of provinces, including all the main cities (Tusell, 1969).

This trend came to an abrupt end between April and September 1931 when, following the Proclamation of the Second Spanish Republic, the banking sector lost 20% of its retail deposits (Figure 3.4). On 14 April 1931, supporters of Republican parties took the streets to proclaim the Second Spanish Republic. Having lost the support of the army and unable to negotiate a transition, king Alfonso XIII flew the country and a provisional government was formed, with the main goal of holding general elections. These took place on 28 June 1931. A second round vote extended until November, but the results of the June elections confirmed the strong majority of the Republican-Socialist coalition. The new Constitution was voted and approved, by 82.6% of the votes on 9 Decem-

ber 1931[173]. The run on deposits was triggered mostly by political factors, while bank fundamentals seem to have played minor to no role. Importantly, currency mismatches in the banking system–an important factor to establish the direction of causality within the "third-generation" framework–seem to have been ignored by depositors. To explore the determinants of deposit losses at the bank level, I conduct four different estimations, which are reported in Table 3.1. For this estimations, I can use the full sample provided by the *Boletines del Consejo Superior Bancario*, as I don't need to couple this data with data on BdE lending to banks. In fact, detailed information on banks' balance sheets was only available to the public two years after banks' submitted it to the *CSB*, so it is not surprising that the public in general was not aware of the situation of specific banks.

Columns 1 to 3 in Table 3.1 report the results of an OLS regression in which the dependent variable is the negative of percentage change of deposits between 1931q1 and 1931q3, and includes banks that gained deposits during the crisis. Thus, a positive percentage change means losing deposits and vice-versa. Independent variables include a set of measures of bank fundamentals: size, capital ratio, share of public debt and stocks in portfolio, share of long term loans over total loans and currency mismatches. The latter are calculated as the share of deposits denominated in foreign exchange over total loans denominated in pesetas. This aims at measuring the extent to which banks suffered increasing pressure on their liabilities denominated in foreign exchange relative to their revenues in domestic currency.[174] To control for specific economic conditions at the bank-province level, I include population, population density, the number of bank branches per 1000 inhabitants, bankruptcies prior to the 1931 crisis, work days lost as a result of strikes before the crisis and the change in agricultural value (all at the province level). Finally I also include a set of covariates that aim at capturing political developments: the share of Republican votes in the April local elections and a dummy for banks in provinces facing violent clashes between Republicans and Monarchists in early May. The number of religious congregations per capita is included to control for the confrontation between secularists and the Catholic Church that characterized the period. I also include a dummy for the largest 6 banks, dummies for the main three banking centers, Madrid, Barcelona and Bilbao, and a dummy for banks in provinces of Catalonia apart from Barcelona. Descriptive statistics of the variables included are provided in Table 3.6 in the Appendix.

None of the variables associated with bank fundamentals or regional economic conditions enter the model significantly. Only in column 3, explanatory variables reach some significance: a bank being in a province where violent clashes were registered in May was more likely to lose deposits, and the same happened for banks in Barcelona and the rest of Catalonia. I further explore the data with a quantile regression (Columns 4 to 8). In this case, I divide the dependent variable in different percentiles (10th, 25th, 50th, 75th and 90th) in order to segment the sample depending on the severity of deposit withdrawals at the bank level. The quantile regression results show a similar picture: observable bank fundamentals do not help predict deposit losses at the bank level.[175] However, Column 8 shows that for banks suffering the sharpest liquidity shocks through deposit losses, political variables played a role. Both the share of Republican votes and the May episodes described above, enter the regression with large and statistically significant coefficients.[176] All in all, these results suggest that the bank run that started in April 1931 was not caused by any fundamental weakness in the banking sector that could be observed by depositors.

	1	2	3	4	5	6	7	8
	OLS	OLS	OLS	Quantile regression				
				Q(0.10)	Q(0.25)	Q(0.50)	Q(0.75)	Q(0.90)
Size	0.0273*	0.0241	0.0298	0.0193	0.0516**	0.0171	0.0127	-0.00795
ln(assets)	(0.0159)	(0.0166)	(0.0186)	(0.0247)	(0.0240)	(0.0191)	(0.0243)	(0.0199)
% change deposits	-0.0549	-0.0579	-0.0509	-0.0366	0.0435	0.0152	-0.0730	-0.213**
1930q1-1931q1	(0.0828)	(0.0848)	(0.0830)	(0.110)	(0.107)	(0.0852)	(0.108)	(0.0886)
Capital ratio	-0.0863	-0.127	-0.121	-0.462**	-0.0391	-0.0983	0.0175	0.425**
(cap+reserves)/assets	(0.151)	(0.154)	(0.152)	(0.202)	(0.196)	(0.156)	(0.199)	(0.163)
Public debt	0.0184	0.0626	0.0679	0.114	0.137	0.0629	0.100	0.201
as % of securities	(0.119)	(0.121)	(0.119)	(0.157)	(0.153)	(0.122)	(0.155)	(0.127)
Stocks	0.0366	-0.0147	-0.0455	0.0138	0.154	-0.0620	-0.0896	-0.0154
as % of securities	(0.0957)	(0.0995)	(0.0981)	(0.130)	(0.126)	(0.101)	(0.128)	(0.105)
Long term loans	-0.0986	-0.0949	-0.0565	0.0161	-0.0977	-0.0293	-0.0422	0.0671
as % of total loans	(0.0876)	(0.0901)	(0.0915)	(0.121)	(0.118)	(0.0940)	(0.120)	(0.0978)
Currency mismatch	0.149	0.0717	0.118	-0.344	-0.188	0.343	0.495	0.295
forex dep/peseta loans	(0.204)	(0.216)	(0.231)	(0.306)	(0.297)	(0.237)	(0.302)	(0.247)
Population		0.0772	-0.0295	0.0356	-0.00214	-0.0128	0.0147	-0.0417
in logs		(0.0582)	(0.0941)	(0.125)	(0.121)	(0.0967)	(0.123)	(0.100)
Population density		0.0117	-0.0224	-0.0453	-0.0211	-0.0184	-0.0227	-0.00156
in logs		(0.0477)	(0.0562)	(0.0744)	(0.0723)	(0.0577)	(0.0733)	(0.0600)
Branches/1000 habitants		0.0205	0.00827	0.000155	0.135	-0.00872	-0.00811	-0.0127
in logs		(0.0608)	(0.0924)	(0.122)	(0.119)	(0.0949)	(0.121)	(0.0986)
Bankruptcies		-0.0118	-0.0323	-0.0240	0.0327	-0.0207	-0.0116	-0.0200
in logs		(0.0220)	(0.0318)	(0.0422)	(0.0410)	(0.0327)	(0.0416)	(0.0340)
Work days lost/worker		0.0220	0.00343	-0.0426	0.00562	0.00469	-0.0157	-0.0233
in logs		(0.0351)	(0.0361)	(0.0478)	(0.0464)	(0.0370)	(0.0471)	(0.0385)
Agricultural value		-0.138	0.0370	0.0971	-0.238	-0.0603	0.0462	0.0441
% change 1930-31		(0.120)	(0.127)	(0.168)	(0.163)	(0.130)	(0.166)	(0.136)
% Republican votes			0.109	0.0726	0.0397	0.142	0.146	0.314**
			(0.145)	(0.192)	(0.186)	(0.149)	(0.189)	(0.154)
May violent clashes (d)			0.168*	-0.165	-0.0281	-0.00529	0.239*	0.270***
			(0.0953)	(0.126)	(0.123)	(0.0979)	(0.124)	(0.102)
Religious congregations			0.0412	0.121	-0.0410	0.0300	0.0518	0.0596
as % of population			(0.0702)	(0.0929)	(0.0903)	(0.0721)	(0.0917)	(0.0749)
Top 6 banks (d)			0.0376	0.195	0.0633	-0.0299	0.0322	0.114
			(0.123)	(0.162)	(0.158)	(0.126)	(0.160)	(0.131)
Madrid (d)			0.106	0.237	0.211	0.215*	-0.0318	0.0816
			(0.118)	(0.156)	(0.152)	(0.121)	(0.154)	(0.126)
Barcelona (d)			0.374*	0.154	0.115	0.281	0.344	0.585***
			(0.192)	(0.254)	(0.247)	(0.197)	(0.251)	(0.205)
Bilbao (d)			-0.0177	0.0376	-0.0387	0.0194	-0.0155	0.0487
			(0.141)	(0.187)	(0.182)	(0.145)	(0.185)	(0.151)
Rest of Catalonia (d)			0.195**	0.0103	0.220*	0.185*	0.170	0.0985
			(0.0976)	(0.129)	(0.126)	(0.100)	(0.127)	(0.104)
Observations	119	119	119	119	119	119	119	119
R^2	0.081	0.141	0.262					

Standard errors in parentheses. * $p < .1$, ** $p < .05$, *** $p < .01$
Marginal effects. (d) for discrete change of dummy variable from 0 to 1

Table 3.1: Determinants of deposit withdrawals (1931q1-1931q3)

Note: All variables for 1931q1 unless otherwise stated. See Table 3.6 in the Appendix for details on each variable. Source: *Boletines del Consejo Superior Bancario* for banks' characteristics and *Anuario Historico del Instituto Nacional de Estadistica* for the rest.

While surprising at first, results in Table 3.1 are consistent with contemporary

accounts that claim that depositors converted deposits into cash and hoarded it because of rumors that the Government might expropriate current accounts after conducting an inspection to find out the origins of capital flight and speculation against the peseta (Martín-Aceña, 1984; Velarde, 2015). The inspection did in fact take place in most banks in Madrid but it was conducted without major incidents or opposition from the banking sector and did not cause any disruption to bank operations.[177] Finally, the large and positive coefficients associated to the dummy for Barcelona and the rest of Catalonia do capture the contagion episode that took place following the failure of Banco de Cataluña, Banco de Reus and Banco de Tortosa on 7 July 1931 as well as specific political developments that took place in Catalonia right after the proclamation of the Republic (Balcells, 1971).

3.5.2 Liquidity assistance and bank lending

Despite bank fundamentals seem to have played a minor role in predicting deposits withdrawals, the Government was very concerned about the feedback loop between the banking and the currency crises, and this delayed and limited their intervention. As a result, the largest part of the Spanish banking system underwent severe liquidity pressure, especially during April and May. It is therefore crucial to examine the impact of the liquidity shock at the bank level in order to understand the outcomes of the 1931 crisis.

Even if aggregate bank lending contracted by 20% from April 1931 (Figure 3.4), not all banks followed this path. Table 3.2 shows the results of a panel regression with bank and province fixed effects that confirms that it was only banks that suffered a sharp liquidity shock due to deposit withdrawals between 1931q1 and 1931q3 the ones that contracted lending sharply. For this, I regress the log of loans against a dummy for the post-1931q1 period, $Post - 1931q1$, and the interaction between the latter and a dummy variable called *Bankrun*. This dummy assigns a value of 1 to banks that suffered a deposit loss between 1931q1 and 1931q3 that was larger than their mean variation in deposits during the three years before the crisis (in percentage). This aims at capturing the average differential impact on bank lending for banks that were affected by the bank run in comparison to those that were not. According to this definition, from the sample of 119 banks, 87 banks suffered a run and 32 did not. The main coefficient of interest is the one associated to the interaction between *Bankrun*

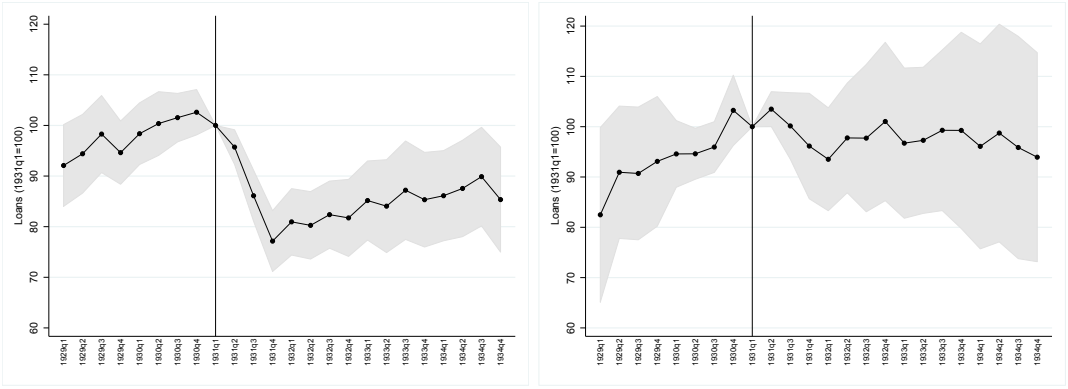
and $Post - 1931q1$. Across the different specifications in Table 3.2, it signals that on average, banks that suffered a sharp drop in deposits between April and September 1931, contracted lending around 16 percentage points more than those that were unaffected. The coefficients associated with $Post - 1931q1$ are not significant. Figure 3.10 provides the same results graphically, in order to show the longer term evolution of bank lending after the shock. By the end of September 1931, unaffected banks' outstanding loans remained at their pre-crisis level. By then, however, affected banks had contracted their loan portfolios around 15%.

	1	2	3	4	5
	Loans (ln)	Loans (ln)	Loans (ln)	Loans (ln)	Loans (ln)
Bank run * Post-31q1	-0.155***	-0.157***	-0.156***	-0.162***	-0.161***
	(0.0261)	(0.0261)	(0.0261)	(0.0273)	(0.0273)
Post-1931q1	0.0244	0.0258	0.0255	0.0311	0.0309
	(0.0224)	(0.0223)	(0.0224)	(0.0231)	(0.0231)
Constant	8.274***	7.168***	9.646***	7.168***	9.644***
	(0.154)	(0.0801)	(0.906)	(0.0817)	(0.793)
Observations	3197	3197	3197	3029	3029
Num. of banks	119	119	119	113	113
Banks included	All	All	All	Ex. top 6	Ex. top 6
Fixed effects	No	Bank	Province	Bank	Province

Standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 3.2: Differences in lending behavior (1928-34), OLS panel fixed effects estimation

Note: dependent variable is the log of loans. $Post - 1931q1$ is a dummy that takes value 1 for all quarters after 1931q1. $Bankrun * Post - 1931q1$ is the interaction between $Post - 1931q1$ and the dummy variable $Bankrun$ (see text for details). Source: *Boletines del Consejo Superior Bancario*.



(a) Affected (b) Unaffected

Figure 3.10: Evolution of bank lending, affected and unaffected banks (1931q1=100)

Note: 87 affected banks, 32 unaffected. Shaded areas show 95% confidence intervals. Source: own calculations based on *Boletines del Consejo Superior Bancario*.

These results suggest that the main problem some banks faced after April 1931 was a liquidity shortage caused by the bank run; they also rule out the overnight collapse in demand for credit as the main driver of the contraction in bank lending. In general, banks under no liquidity pressure could and did keep lending. Importantly, this result is robust to different specifications of where the line is drawn for a deposit loss to be reflecting a run on a given bank. In Figure 3.12 in the Appendix I show that using a threshold of 10%, in line with the one Bernanke and James (1991) used, the results hold. Therefore, the extent to which banks suffering from the bank run compensated deposit losses with liquidity assistance from the BdE can help understand the evolution of lending during and after the crisis. To assess this, I create a variable that allows for the comparison of the severity of liquidity shocks suffered by individual banks between April and September 1931. The variable aims at capturing the extent to which bank's liquidity needs were satisfied by their access to the discount window of the BdE and by drawing from their own cash reserves. It is defined by:

$$Allocation_i = \frac{\text{Liquidity from the BdE}_i}{|\text{Deposits lost - Cash lost}_i|} \tag{3.1}$$

where the term *Liquidity from the BdE*$_i$ is the sum of rediscounts and advances received by bank i between April and September (1931q1-q3). In turn, the term |*Deposits lost - Cash lost*$_i$| is the absolute value of of deposits lost minus the

variation in cash during the same period. An $Allocation_i$ value of 1 implies perfect proportionality, as the given bank received enough assistance from the BdE to respond to its clients' deposit withdrawals, taking into account how much cash the bank used to do so before resorting to the BdE. If the variable takes a value lower than 1 (with a lower limit on 0) this implies that the representative bank is falling short of liquidity and, everything else constant, will have to contract the asset-side of its balance sheet. A bank having an $Allocation_i$ value greater than 1 is then receiving *excess* liquidity.[178] Looking at banks' daily borrowing from the discount window of the BdE during 1931, it can be seen that liquidity provision was limited until late May, when capital controls were introduced, the fiduciary issuing limit was raised and bank borrowing from the BdE surged (Figure 3.8). Until the last days of May, banks were effectively competing for limited central bank assistance, and many of them underwent severe liquidity pressure. This is shown in Table 3.3, which provides the monthly $Allocation_i$ value for the largest 6 banks (monthly data is not available for the rest of the sample). The column "W.Average" provides the value of $Allocation_i$ weighted by each bank's assets. Until June, Spain's largest banks were under severe liquidity pressure.

	Allocation (cummulative)						
	BCEN	BHAM	BUMA	BECR	BBIL	BVIZ	W.AVERAGE
April	0.9	1.4	1.3	0.0	0.7	0.4	0.7
May	0.8	0.8	2.0	0.1	1.5	1.2	0.8
June	2.1	1.2	3.5	0.5	1.2	0.9	1.2
July	1.1	0.9	3.8	0.7	1.9	1.1	1.1
August	1.4	0.9	4.3	0.8	2.2	1.1	1.2
September	1.9	0.9	5.6	0.8	2.2	0.9	1.4
Average	1.4	1.0	3.4	0.5	1.6	0.9	1.1

Table 3.3: Allocation of emergency liquidity, (April-September, 1931)

Note: allocation values in the last column are weighted by the size of banks' deposits before the crisis (end of March 1931). Source: own calculations, based on *Actas de la Comisión de Operaciones del Banco de España*, *Boletines del Consejo Superior Bancario* and *Liquidez bancaria* (Servicio de estudios del Banco de España, 1935).

Can banks' liquidity shortages predict lending after the crisis? To explore this, I run an OLS regression, in which I regress the ratio of loans, assets and different securities in 1934q3 over 1931q1 against $Allocation_i$ and a number of covariates.[179] Hence, the dependent variables capture the evolution of bank portfolios after the crisis compared to their pre-crisis levels. Apart from $Allocation_i$,

other covariates include the ratio of deposits and capital in 1934q3 over 1931q1, to capture how did bank portfolios react to returning depositors or eventual recapitalizations. I also include bank currency mismatches in order to control for the possibility that banks did use liquidity from the BdE to rollover their forward contracts in Sterling. I also include a dummy for Banco Urquijo de Madrid (BUMA), as this bank was the main recipient of liquidity assistance and is a clear outlier.[180] Results are reported in Tables 3.4 and 3.5.

	1	2	3	4	5	6	7	8	9	10
	Loans	Loans	Loans	Loans	Loans	Assets	Assets	Assets	Assets	Assets
Allocation	0.191***	0.192***	0.193***	0.192***	0.426***	0.0798*	0.0829***	0.0780***	0.0781***	0.187***
	(4.39)	(4.47)	(4.37)	(4.26)	(6.07)	(1.86)	(3.18)	(3.15)	(3.08)	(4.23)
Desposits		0.234	0.229	0.238	-0.00902		0.703***	0.727***	0.724***	0.609***
(ratio 1934q3/1931q1)		(1.26)	(1.19)	(1.20)	(-0.05)		(6.20)	(6.73)	(6.47)	(5.86)
Capital			-0.112	-0.138	-0.436			0.522*	0.533*	0.394
(ratio 1934q3/1931q1)			(-0.22)	(-0.27)	(-1.08)			(1.86)	(1.83)	(1.55)
Currency mismatch				-0.127	-0.375				0.0505	-0.0653
(ratio 1934q3/1931q1)				(-0.31)	(-1.18)				(0.22)	(-0.33)
BUMA					-1.565***					-0.730**
dummy					(-3.82)					(-2.83)
Intercept	0.610***	0.416**	0.528	0.565	0.926**	0.789***	0.203*	-0.324	-0.339	-0.170
	(9.29)	(2.47)	(0.99)	(1.01)	(2.12)	(12.16)	(1.99)	(-1.08)	(-1.08)	(-0.62)
N	24	24	24	24	24	24	24	24	24	24
R^2	0.467	0.505	0.506	0.508	0.728	0.136	0.695	0.740	0.741	0.821

t statistics in parentheses. * $p < .1$, ** $p < .05$, *** $p < .01$

Table 3.4: Evolution of banks' lending and assets after the 1931 crisis (OLS)

Note: in columns 1 to 5, dependent variable is the ratio of total loans in 1934q3 over 1931q1; in columns 6 to 10 is the same ratio but for total assets. Source: *Actas de la Comisión de Operaciones del Banco de España* and *Boletines del Consejo Superior Bancario* (see text).

Results in Columns 1 to 4 in Table 3.4 show that banks that received more liquidity assistance during the crisis maintained their loan portfolio afterwards (Figure 3.11). Even after controlling for how fast banks recovered depositors' hoarded cash after the panic had subsided, for recapitalization, and for their exposure to currency mismatches, $Allocation_i$ remains the main explanatory variable.[181] The fact that currency mismatches do not enter the regression significantly makes sense because from June, the Government nationalized all banks' foreign exchange liabilities (Figure 3.5)[182] An interpretation of the average effectiveness of the LLR intervention can be obtained from the coefficient associated to $Allocation_i$ in column 5 in Table 3.4. This implies that, holding everything else constant, the average bank with an $Allocation_i$ value of 1.0, kept its lending portfolio at 43% of the pre-crisis level. This suggests that, despite political developments, the LLR intervention worked in the right direction: banks used LLR liquidity to keep lending afloat.

	1 Securities	2 Securities	3 Public Debt	4 Public Debt	5 Bills	6 Bills	7 Stocks	8 Stocks	9 Cash	10 Cash
Allocation	0.0406*	0.0638	0.0162	0.0281	0.0250	0.0871	-0.149	-0.0720	-0.149	-0.0720
	(1.86)	(1.41)	(0.24)	(0.20)	(0.44)	(0.74)	(-0.89)	(-0.20)	(-0.89)	(-0.20)
Deposits	0.950***	0.925***	1.043***	1.031***	0.792***	0.727**	-0.476	-0.558	-0.476	-0.558
(ratio 1934q3/1931q1)	(9.86)	(8.68)	(3.49)	(3.09)	(3.16)	(2.62)	(-0.64)	(-0.68)	(-0.64)	(-0.68)
Capital	0.127	0.0970	1.842**	1.827**	1.616**	1.537**	1.603	1.504	1.603	1.504
(ratio 1934q3/1931q1)	(0.50)	(0.37)	(2.37)	(2.24)	(2.47)	(2.27)	(0.83)	(0.75)	(0.83)	(0.75)
Currency mismatch	-0.118	-0.142	0.189	0.177	0.232	0.166	0.0482	-0.0337	0.0482	-0.0337
(ratio 1934q3/1931q1)	(-0.60)	(-0.70)	(0.31)	(0.28)	(0.45)	(0.31)	(0.03)	(-0.02)	(0.03)	(-0.02)
BUMA		-0.155		-0.0793		-0.416		-0.517		-0.517
dummy		(-0.59)		(-0.10)		(-0.60)		(-0.25)		(-0.25)
Intercept	-0.0552	-0.0193	-1.697*	-1.679*	-1.628**	-1.532*	-0.0673	0.0520	-0.0673	0.0520
	(-0.20)	(-0.07)	(-2.02)	(-1.90)	(-2.31)	(-2.09)	(-0.03)	(0.02)	(-0.03)	(0.02)
N	24	24	24	24	24	24	24	24	24	24
R^2	0.842	0.845	0.469	0.469	0.448	0.459	0.090	0.093	0.090	0.093

t statistics in parentheses. * $p < .1$, ** $p < .05$, *** $p < .01$

Table 3.5: Evolution of banks' portfolio of securities after the 1931 crisis (OLS)

Note: dependent variable is the ratio of each category in 1934q3 over 1931q1. *Securities* includes Public Debt, Bills of Exchange and Stocks. Source: *Actas de la Comisión de Operaciones del Banco de España* and *Boletines del Consejo Superior Bancario* (see text).

Interestingly, when cash hoarding ceased and banks started recovering deposits from September onwards (variable *Deposits*, Columns 1 to 4 in Table 3.4), these were not used to extend new loans. Similar to what Bernanke (1983) found for the case of the United States, the liquidation of loans that could not be prevented by the provision of liquidity assistance from the BdE was permanent and instrumental for the deepening of the recession. Columns 5 to 8 in Table 3.4 confirm this. Here the dependent variable is the ratio of bank assets in 1934q3 over 1931q1. In this case the evolution of bank deposits becomes very significant. This shows, unsurprisingly, that banks that regained depositors' confidence faster also grew back faster. However, if recovered deposits were not lent, how did banks employ them? Columns 1 and 2 in Table 3.5 show that when banks regained deposits they invested them almost entirely in securities, not in creating new loans.[183] In particular, Columns 3 to 9 in Table 3.5 show that returning deposits were mostly invested in public debt and 3-month bills of exchange, while banks' purchase of private bonds and stock remained depressed. As could be expected, after the liquidity shock, banks shortened their average asset maturity in what can be described as a flight-to-liquidity. However, the most important result from Tables 3.4 and 3.5 is that the intervention of the BdE as LLR, within its limits, contributed to help banks in keeping lending afloat. However, because of the limitations detailed above, it could not be large or fast enough to prevent the overall contraction in lending.

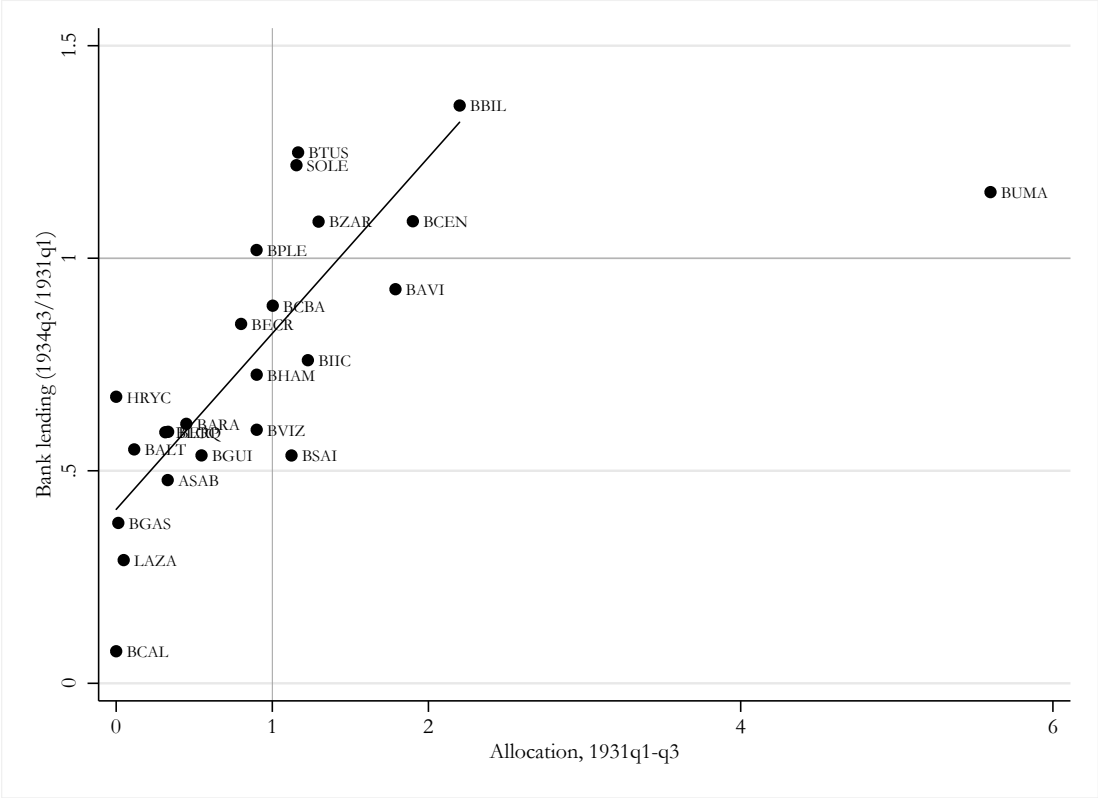


Figure 3.11: Liquidity assistance and bank lending

Note: the line of fitted values excludes BUMA. Source: see text.

At least two important final questions are due. First, uncertainty caused by domestic political and social developments as well as by turmoil in international financial and commodity markets must have played a role in banks' lending decisions. However, if banks remained liquid during the crisis–either because they did not suffer deposit withdrawals or because they received enough liquidity from the BdE–they continued to lend[184]. It could also be that banks invested in certain sectors were more exposed to deposit withdrawals if depositors learned that these sectors were going to be affected by the recession. However, results from Table 3.1 show that the bank run was not related to any observable measure of bank fundamentals, including the change in the value of agricultural production at the provincial level. Moreover, qualitative evidence suggests that most of the banks in my sample competed for similar depositors and, more importantly, borrowers[185]. A second concern arises when considering the way bank loans and deposits are created. When a bank creates a loan, it also creates a deposit, which the recipient of the loan might place at the same or a different bank. This implies that if deteriorating conditions caused firms to suspend investment projects, the

drop in deposits would be just reflecting firms liquidating loans with banks. This is something that can not be completely ruled out with the data at hand. However, qualitative evidence presented above suggests that this did not drive the contraction in bank lending figures (Figures 3.1 and 3.4). From the very onset of the crisis, firms faced credit restrictions from banks, which then translated to a sharp decline in employment in important sectors such as real estate. It is certainly possible that firms reduced their demand for credit, but according to the evidence presented above, this happened as a result of credit restrictions that originated in the banking sector during the months in which the BdE was quantitatively limited to provide liquidity assistance.

3.6 Conclusion

As the main economy operating an inconvertible currency during the late 1920s and early 1930s, conventional accounts argue that Spain avoided the Great Depression because the Banco de España (BdE) could lend freely to ailing banks during the 1931 banking crisis. Drawing on new data, this chapter provides contrasting evidence, and contributes to explain the sharp contraction in bank lending during the 1930s. When, following the unexpected political regime change that took place in April 1931 depositors ran on banks, Spain fell prey to the so-called "third generation" currency crisis dynamics. Accumulated currency mismatches in the banking sector conflicted with the provision of liquidity assistance.

The findings of this chapter provide a reinterpretation of the links between the Gold Standard and banking crises during the Great Depression. So far, Spain has been used as the example of a country that *escaped* the Depression because its currency was not convertible to gold. Evidence presented here contrasts with this account. After booming growth in the late 1920s, Spain experienced a severe economic contraction following the 1931 crisis, to which the collapse in bank lending was a major driving force. While political instability and uncertainty did undoubtedly play a role, I find that when the banking system experienced strong liquidity pressure in 1931, monetary authorities were severely constrained, and this limited the effectiveness of their intervention. Trapped in a dilemma between liquidity provision and capital mobility, the BdE could only lend freely when capital mobility was forgone and negotiations started for a stabilization loan with international lenders. As a result, banks suffered severe liquidity pressure and

restricted credit supply. The Spanish case suggests that monetary authorities' room to deal with banking crises during the Great Depression was not necessarily determined by the *de jure* binary contingency of being in or out of gold, but also by comparative levels of financial and institutional development. Despite the peseta was not convertible to gold, Spanish monetary authorities also found their hands (and minds) trapped in golden fetters.

3.7 Appendix

3.7.1 Data and alternative estimations

Variable	Obs.	Mean	St. dev.	Median	Max	Min	Table
% change in deposits (1931q1-1931q3)	119	-0.08	0.22	-0.06	-0.76	0.94	
Size (log of assets)	119	9.96	1.68	9.82	14.37	6.53	
% change in deposits (1930q1-1931q1)	119	0.08	0.25	0.06	-0.56	1.35	
Capital ratio ((capital+reserves) as % of assets)	119	0.26	0.17	0.20	0.99	0.00	
Public debt as % of securities	119	0.36	0.22	0.37	0.97	0.00	
Stocks as % of securities	119	0.30	0.24	0.25	1.00	0.00	
Long term loans as % of total loans	119	0.21	0.26	0.05	0.94	0.00	
Currency mismatch (forex dep as % of pta. loans)	119	0.07	0.11	0.02	0.56	0.00	
Population (in logs)	119	6.53	0.72	6.41	7.49	4.64	
Population density (in logs)	119	4.53	0.79	4.54	5.46	2.71	
Branches/1000 inhabitants (in logs)	119	-2.89	0.53	-2.98	-1.76	-4.07	
Bankruptcies/population (in logs)	119	-0.54	1.39	-0.25	1.50	-2.60	3.1
Work days lost per worker (in logs)	119	2.46	0.69	2.33	4.39	0.00	
Agricultural value (% change)	119	0.10	0.18	0.05	0.71	-0.26	
% of Republican votes	119	0.52	0.23	0.60	0.87	0.00	
Religious congregations/population (in logs)	119	-8.30	0.54	-8.31	-7.37	-9.56	
May violent clashes (dummy)	119	0.25	0.43	0.00	1.00	0.00	
Top 6 banks (dummy)	119	0.05	0.22	0.00	1.00	0.00	
Madrid (dummy)	119	0.15	0.36	0.00	1.00	0.00	
Barcelona (dummy)	119	0.21	0.41	0.00	1.00	0.00	
Bilbao (dummy)	119	0.04	0.20	0.00	1.00	0.00	
Rest of Catalonia (dummy)	119	0.06	0.25	0.00	1.00	0.00	
Bank run (dummy)	119	0.73	0.45	1.00	1.00	0.00	3.2
Allocation	24	1.00	1.15	0.89	5.60	0.00	3.4,3.5

Table 3.6: Descriptive statistics of all variables

Source: see text.

Bank code	Name	Assets as % of total
ASAB	Anglo South-American Bank	4.8%
BLOQ	Banca Lopez Quesada	0.1%
BTUS	Banca Tusquets	0.1%
BALT	Banco Aleman Transatlantico	0.1%
BCAL	Banco Calamarte	0.1%
BCEN	Banco Central	4.1%
BCBA	Banco Comercial de Barcelona	0.8%
BARA	Banco de Aragon	1.4%
BAVI	Banco de Avila	0.2%
BBIL	Banco de Bilbao	7.7%
BVIZ	Banco de Vizcaya	6.0%
BECR	Banco Español de Credito	12.8%
BERP	Banco Español del Rio de la Plata	2.7%
BGAS	Banco Germanico de America del Sur	0.3%
BGUI	Banco Guipuzcoano	1.9%
BHAM	Banco Hispano Americano	12.6%
BIIC	Banco Internacional de Industria y Comercio	1.2%
BPLE	Banco Popular de Leon XIII	0.1%
BSAI	Banco Sainz	0.6%
BUMA	Banco Urquijo de Madrid	4.3%
BZAR	Banco Zaragozano	0.9%
HRYC	Herrero Riva y Cia	0.2%
LAZA	Lazard Brothers	1.1%
SOLE	Soler y Torra Hermanos	0.3%
Total		64.3%

Table 3.7: Banks included in Tables 3.4 and 3.5

Note: share of assets, loans and deposits is as % of total banking sector in 1931q1. Source: *Boletines del Consejo Superior Bancario*.

		Subscribed	As % of total
Spanish banks		151.0	43%
	Banco de Bilbao (BBIL)	38.0	11%
	Banco Hispano Americano (BHAM)	33.7	10%
	Banco Urquijo de Madrid (BUMA)	16.8	5%
	Banco de Vizcaya (BVIZ)	13.4	4%
	Banco Español de Credito (BECR)	11.1	3%
	Banca March (BMCH)	10.3	3%
	Others (in Barcelona and Bilbao)	27.7	8%
Foreign banks		43.8	13%
	Irving Trust	13.0	4%
	Midland Bank	6.3	2%
	Moroccan State Bank	6.0	2%
	Credit Lyonnais	6.0	2%
	Lazard Brothers	6.5	2%
	Anglo South American Bank	3.5	1%
	International Banking Corporation	2.5	1%
Firms		41.0	12%
	CHADE	6.0	2%
	Rio Tinto	7.5	2%
	Rothschild	3.0	1%
	R.C. Asturiana	4.0	1%
	Minas del Rif	7.5	2%
	Peñarroya	2.5	1%
	Riegos y Fuerzas del Ebro	2.5	1%
	Tabacos de Filipinas	3.0	1%
	Sota y Aznar	5.0	1%
Public		24.7	7%
Others (not reported)		89.5	26%
Total		350.0	100%

Table 3.8: Subscribers of gold bonds issued in December 1929 (million pesetas)

Source: *Información Financiera, Gran Vida, Año XXVII, Num.318, p.27.*

	1	2	3	4	5
	Loans (ln)	Loans (ln)	Loans (ln)	Loans (ln)	Loans (ln)
Bank run * Post-31q1	-0.306***	-0.310***	-0.306***	-0.324***	-0.320***
	(0.0299)	(0.0299)	(0.0299)	(0.0316)	(0.0316)
Post-1931q1	0.0631**	0.0647**	0.0632**	0.0647**	0.0633**
	(0.0200)	(0.0200)	(0.0200)	(0.0203)	(0.0204)
Constant	8.275***	7.241***	9.602***	7.248***	9.602***
	(0.155)	(0.0796)	(0.879)	(0.0813)	(0.778)
Observations	3197	3197	3197	3029	3029
Num. of banks	119	119	119	113	113
Banks included	All	All	All	Ex. top 6	Ex. top 6
Fixed effects	No	Bank	Province	Bank	Province

Standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 3.9: Differences in lending behavior (1928-34), OLS panel FE (alternative estimation)

Note: dependent variable is the log of loans. $Post - 1931q1$ is a dummy that takes value 1 for all quarters after 1931q1. $Bankrun * Post - 1931q1$ is the interaction between $Post - 1931q1$ and the dummy variable $Bankrun$ (see text for details).

Source: *Boletines del Consejo Superior Bancario.*

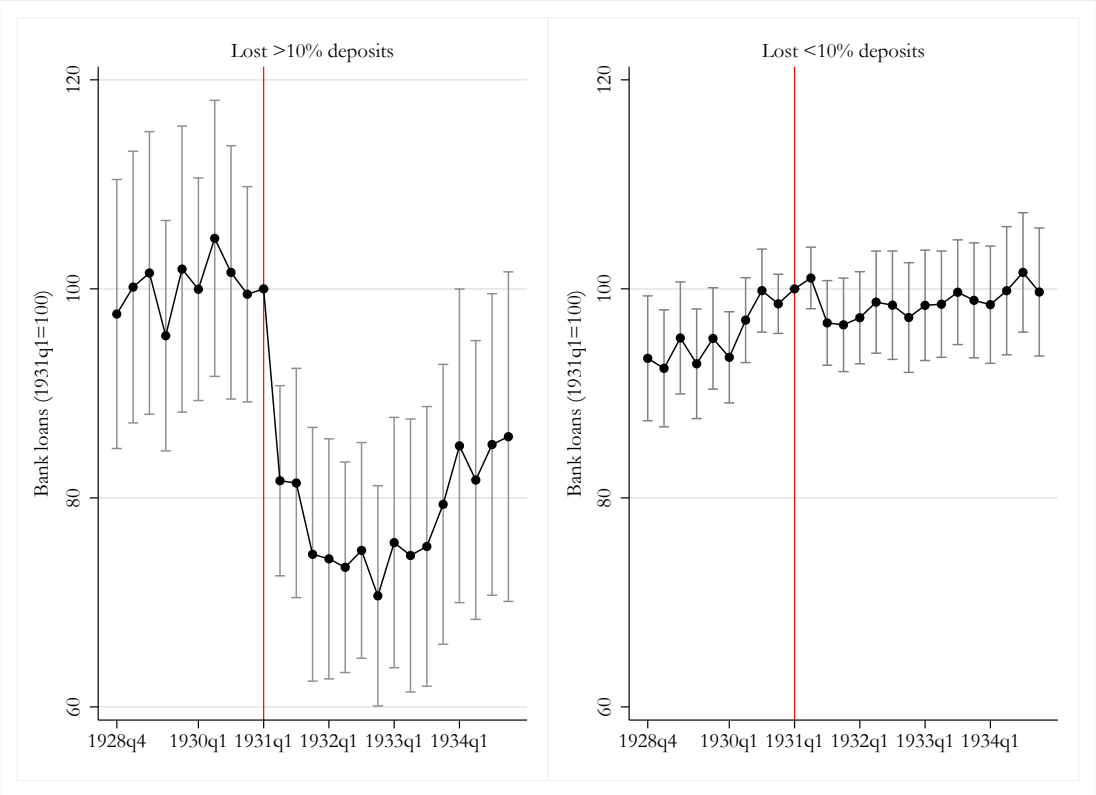


Figure 3.12: Evolution of bank lending, affected and unaffected banks (1931q1=100)

Note: shaded areas show 95% confidence intervals. Source: own calculations based on *Boletines del Consejo Superior Bancario*, see text.

Allocation of limited lender of last resort assistance: bank-level evidence from the 1931 crisis in Spain

4.1 Introduction

Until the recent financial crisis, the distribution of central bank emergency liquidity among different banks was regarded as playing a secondary role. In well-functioning interbank markets, excess liquidity borrowed by a given bank can be channeled to institutions in need. Recent developments, however, have highlighted the importance of individual borrowing from the discount window of the central bank when interbank markets freeze (Allen and Gale, 2017). Distribution of funds through interbank markets can no longer be taken as a working theoretical assumption, because interbank markets can easily fall prey of panic. This is especially the case as banks' main source of funding is now wholesale (interbank) and not traditional retail deposit funding (Brunnermeier, 2009; Gorton, 2010; Mehrling, 2010). Historically, financial crises have taken place at different stages of financial development, where interbank markets have played both stabilizing roles through the creation of liquidity or destabilizing through contagion (Schnabel and Shin, 2004; Gorton, 1985; Calomiris and Mason, 1997; Calomiris and Carlson, 2017; Mitchener and Richardson, 2013, 2019). As such, bank-level allocation of emergency liquidity is particularly important in emerging economies, because–as discussed in Chapter 3–monetary authorities face external constraints when dealing with aggregate liquidity pressure. In the particular case of emerging economies, balance of payments or fiscal constraints limit the room central banks and governments have to provide liquidity assistance, and this brings (back) to the table the question of how to distribute a limited amount of available liquidity among different borrowers (Ugolini, 2017). Because of these constraints, and lacking well-functioning interbank markets, the distribution of scarce funds be-

comes a crucial element of lender-of-last-resort interventions, as already stressed by Bagehot (1873).

This chapter analyses the allocation of emergency liquidity at the bank-level during the 1931 crisis in Spain. What determined the distribution of the BdE's liquidity provision? What were the consequences? In this chapter, I am not only interested in the amounts of liquidity borrowed by each bank, but also in the way these differences in liquidity assistance can explain their differential reaction during and after the crisis. I argue that this is an important aspect of the 1931 crisis in Spain because, as I discussed in Chapter 3, banks that did not experience a run on deposits or borrowed large quantities from the BdE did not contract lending significantly. It was only banks under liquidity pressure that did so. This suggests that demand for credit did not deteriorate overnight with the political regime change that took place in April 1931, but that the weight of the accumulated currency crisis severely limited the room for the BdE to extend liquidity at banks' demand. Under a limited amount of liquidity available, and until capital controls were introduced in late May and the limit to the fiduciary issue of the BdE was raised, banks were effectively competing for funds at the discount window of the BdE. Understanding why some banks obtained more or less liquidity assistance from the BdE and the consequences of these differences can help to understand the evolution of the banking sector in Spain during the Great Depression.

So far, the allocation of emergency liquidity by the BdE during 1931 crisis has remained mostly unexplored. Accounts on bank-specific events during the 1931 crisis have been been elaborated mostly from the written mintues of the Banco de España, but disaggregated bank-level data has not been yet brought to the picture. The aim of this chapter is to fill this gap by combining bank-level data on discount window borrowing with also bank-level balance sheet data. I further develop the analysis of the measure of allocation of liquidity I use in Chapter 3, and when data allows to, I increase the time-frequency of the analysis to the monthly level. This exercise provides two main findings. First, I document that during the 1931 crisis, in the absence of a well-developed money market and eligibility criteria for collateral in rediscount operations, the BdE lent mostly to banks with whom it had a strong lending relationship prior to the crisis. Second, I find that these banks are the ones that, regardless of the severity of the liquidity shock they suffered, managed to keep their loan portfolio afloat during and after

the crisis. This was particularly important during the first two months of the crisis, when the BdE was quantitatively constrained to lend. Accordingly, I find that banks that suffered more liquidity pressure during April and May and could not borrow enough from the BdE, contracted credit. In line with Chapter 3, this suggests that the external constraints that Spanish monetary authorities faced during 1931 are an essential part of the crisis; in presence of a limited amount of emergency liquidity available, the BdE could not provide all banks with liquidity at demand. While not denying a role for a change in expectations from a sharp and unexpected political regime change, the limitations imposed to Spanish monetary authorities by their condition of emerging and peripheral economy are key elements that need to be taken into account.

The findings of this chapter illustrate the difficulties faced by the lender of last resort in emerging economies. These difficulties stem from relative low levels of financial development and external constraints. Importantly, the findings of this chapter show that these lending constraints were not determined by the exchange rate regime. Even if Spanish monetary authorities were not formally constrained by an exchange rate peg, they had limited room to act. The chapter also documents the implications of these limitations for the evolution of bank portfolios during and after a crisis, thus contributing to a field that, albeit has remained unexplored during the last decades, has experienced a revival during the recent years (Humphrey, 2010, 2013; Dreschel, Dreschel, Marques-Ibañez, and Schnabl, 2016).

The rest of the chapter is organized as follows. Section II provides a discussion of the so-called Bagehot Rule, with the focus on the role of interest rates and collateral eligibility in improving the efficiency of emergency liquidity allocation. Section III presents the data sources. Section IV describes the functioning of the discount window of the BdE. Section V analyses the allocation of emergency liquidity and its consequences, and Section VI concludes.

4.2 The Bagehot Rule and gold-inconvertible currencies

When Walter Bagehot published *Lombard Street: a description of the money market*, he was referring to a very specific money market (London), which was the core of a very specific monetary system (the classical Gold Standard). The Lon-

don money market was the most developed and liquid market, and Britain was the main nation and creditor in the international monetary system that lasted until the First World War. Accordingly, throughout the nineteenth century, the Bank of England developed a lender of last resort technique that was equally specific, if not unique (Flandreau and Ugolini, 2013). This technique, which has come to be known as "the Bagehot Rule", is best presented in Bagehot's own words[186]:

> *"(...) there are two rules. First. That these loans should only be made at a very high rate of interest (...). Secondly. That at this rate these advances should be made on all good banking securities, and as largely as the public ask for them."*

Given the specificities of the London money market, however, it is hard to describe Bagehot's Rule as a universal rule that can be automatically adopted by any given central bank. As Ugolini (2017) highlights, it is better understood as a positive description of a very specific money market, and as a policy that had already been in place when *Lombard Street* was published (Bignon, Flandreau, and Ugolini, 2012). In fact, some of Bagehot's dictums–namely that the central bank should *lend freely* and make its willingness to act known to the market–have survived time well. Others, such as the role of high interest rates or the nature of the collateral purchased by the central bank have not aged equally. In contrast with what Bagehot advocated, recent interventions in the most advanced economies have been implemented alongside sharp cuts in central bank rates and with a significant widening of the criteria of eligible collateral (Humphrey, 2010, 2013; Bordo, 2014). Emerging markets, however, face different constraints. The role capital flight or sharp exchange rate depreciation are (and have been) distinct traits of financial crises in emerging markets, and the importance of financial development in the effectiveness of lender of last resort interventions is also a crucial element that needs to be taken into account regardless of the exchange rate regime (Calvo, 2006; Rey, 2015).

4.2.1 Pricing emergency liquidity provision

One of the most discussed topics regarding the provision of emergency liquidity to the banking system is the price at which this liquidity should or can be provided. This debate is not new; its main ideas were already outlined during the

19th century, when most countries operated gold-convertible currencies. During the last quarter of the 20th century, and in the run up to the 2008 financial crisis, this debate faded out substantially, but it has experienced a revival in the last decade (Ugolini, 2017). Why should the price of liquidity matter? It matters if, as Bagehot (1873) described, central bank reserves are limited[187]. In this case, providing emergency liquidity at high interest rates had another justification for Bagehot, besides the three main pillars of the "Bagehot Rule" described above. In order to combine the provision of emergency liquidity *freely* with the protection of limited central bank reserves[188]:

> "[a very high rate of interest] *will operate as a heavy fine on unreasonable timidity, and will prevent the greatest number of applications by persons who don't require it. The rate should be raised early in the panic, so that the fine may be paid early; that no one may borrow out of idle precaution without paying well for it; that the banking reserve may be protected as far as possible."*

As the quote above suggests, Bagehot himself was concerned about strategic borrowing (out of idle precaution) and its effects on the allocation of limited reserves. Interestingly, without the possibility of using the gold reserve of the BdE to defend the exchange rate during the first months of the crisis, Spanish monetary authorities also had limited reserves. In fact, there is still a relatively open debate regarding the importance of this point for emerging economies. Synthesizing a vast theoretical literature that developed in the last two decades[189], Martin (2009) suggested that countries operating fiat currencies are not in need of raising interest rates when the central bank provides emergency liquidity during banking panics. However, this is rarely the case in the presence of severe exchange depreciation, large currency mismatches in the banking system and more importantly, in a country in which the central bank does not issue the international currency of reserve. As such, the central bank might need to charge a high interest rate to avoid an excessive injection of liquidity that could, in turn, pose a threat to exchange rate and price stability (Calvo, 2006). In this case, then, the efficient allocation of funds is the justification of a high interest rates, as it would prevent self-selection, i.e. banks that are not in need of funds to resort to the central bank *too early*. Although some authors have highlighted this problem as a feature of the recent interventions of central banks in developed economies, the theoretical literature seems to have agreed in that in a fiat regime, there is no reason for the lender of last resort to raise interest rates, as there is no metallic reserve to

protect. This conclusion, while can hold for developed money markets and core economies–and held to a certain extent in nineteenth century Britain (Flandreau and Ugolini, 2013)–is not necessarily the case in developing, peripheral and/or politically unstable economies. As Ugolini (2017) recently argued[190]:

> *"(...) the idea that "penalty rates" find no justification under a fiat money regime has also been reconsidered in the light of the fact that even under such regimes central banks do find serious limitations to their monetary policy making: if existing political or fiscal constraints imply that room for central bank intervention may actually be limited, Bagehot's concern with discouraging a run on cash retains much of its significance."*

In contrast with the idea that gold-inconvertibility of the Spanish peseta allowed for a fully loaded LLR intervention in 1931, the need of a high interest rate seems to apply also for Spain during that year. Despite inconvertibility protected Spanish monetary authorities from both an internal and external drain of gold, the role of rapid exchange rate depreciation was a limiting factor, as I discussed in Chapter 3. Under limited room to act, and regardless of the exchange rate regime, it is necessary to understand the role of the price of emergency liquidity, the timing of its provision and the elegibility criteria for collateral. As I argue in the following sections, Spanish monetary authorities did not follow the Bagehot Rule during 1931, despite it would have helped improve the allocation of liquidity.

4.3 Data

In order to disaggregate the intervention of the BdE and to contribute to previous aggregate accounts, this chapter draws from two different data sources. On the one hand, I use the *Actas de la Comisión de Operaciones del Banco de España*, which includes the BdE's lending operations and the daily level in its Madrid headquarters. By the 1920s and 30s, almost all lending operations were conducted with banks that had CSB membership (Consejo Superior Bancario). CSB members could access the discount window of the BdE if they abode by the liquidity and capital ratios that the CSB had determined. The BdE had two ways of lending to banks. First, and in line with most central banks at the time, the BdE would purchase bills of exchange that banks had previously discounted to firms or individuals. These operations, called "discounts", involved

the outright purchase of the bill by the BdE, which it held until maturity. Bills purchased had to contain two signatures of *"reputed solvency"* and mature in no more than 90 days. For this operations, data in the *Actas* contain the name of the counterparty, the amounts discounted, and the number of bills per operation. Unfortunately, there is no information on maturity, acceptors, endorsers or drawer/drawee of the bill. Second, the BdE lent through advances (or so-called Lombard operations). Advances were short term credit operations for which a certain security was pledged as collateral. As described in Chapter 2, these were similar to today's repurchase operations (repos) but with the difference that the BdE did not buy and sell the underlying asset. Direct purchases of public debt had been banned since the early 1900s (Martín-Aceña, 1984). The BdE, however, could lend against its security, charging an interest rate and a haircut. The haircut was the difference between the amount of credit granted and the market value of the collateral pledged. For advances, the *Actas* also contain information on the collateral pledged (the vast majority of it being public debt), but not on the individual haircut per operation. Complementary qualitative information from the BdE is taken from the *Actas del Consejo de Gobierno del Banco de España* and the *Estatutos del Banco de España*, which include the meetings of the Board of Governors of the BdE and the latter's statutes, respectively.

The second source of data comes from the banking system. I collect balance sheet information for a number of different items at the quarter-bank-level. This is collected from the *Boletines del Consejo Superior Bancario*, which published balance sheet data for both its members and non-members (Spanish and foreign banks). Data from the *Consejo Superior Bancario* is complemented with the meetings of the Board, which include the discussions between member banks, the Board of the CSB, the BdE and the Government during the crisis. Other qualitative sources come from bank's specific archives. I collected qualitative evidence from the *Archivo Histórico del BBVA*, *Archivo Histórico del Banco de Santander* and *Arxiu Històric del Banc de Sabadell*.

4.4 The discount window of the BdE

When depositors run on banks to withdraw their funds in April 1931, the BdE found itself in a new scenario, despite it had intervened as lender of last resort in previous occasions[191]. However, 1931 was different, at least in three impor-

tant dimensions. First, in 1931, a very large number of banks was affected with more than 35 banks losing 15% deposits or more[192]. Moreover, the crisis had a fundamental political component, which made it more difficult for the BdE to discriminate between banks that were borrowing because of weak fundamentals or because of a politically-triggered liquidity shock. All previous LLR interventions had involved an individual thorough inspection of the troubled institutions that took place at the same time that emergency liquidity was provided. Banks suspended payments (temporarily or permanently) while a final decision on their future was taken[193]. However, during the 1931 crisis, taking all banks' idiosyncrasies into consideration at the same time that liquidity was provided was not an option. Banks' were cutting back credit to the private sector as they faced severe liquidity constraints due to depositors' withdrawal of funds. Faced with this situation, Spanish monetary authorities had to make a move without having detailed information on banks' individual situation[194] As a consequence, when the crisis started, the BdE faced a challenge in evaluating both credit risk when it rediscounted a bill, but also individual counterparty risk when it lent against collateral.

A second important difference was that in 1931, the shock was unrelated to banks' fundamentals and originated on the liability side of banks' balance sheets[195]. As a central bank with limited room for action, the BdE found itself with the challenge of evaluating all troubled banks' fundamentals in such a short period of time[196]. Third, as I documented in Chapter 3 in detail, the macroeconomic backdrop against which the 1931 crisis took place was, by far, the worst of all previous cases[197].

Given the three challenges presented above, more detail on the reaction of Spanish monetary authorities during 1931 is due. So far, most accounts of the 1931 crisis have placed the focus on the fact that between April and September 1931 the banking system lost 1600 million pesetas in deposits and the BdE expanded its balance sheet in 1500 million pesetas (Figure 4.1). At first sight, the BdE replaced depositors almost entirely. These figures suggest that there was no liquidity pressure during the crisis. However, aggregate figures cannot answer why, if the BdE *replaced* depositors by granting banks with the exact same amount of liquidity they lost, bank lending plummeted by 20% between April and September 1931. Moreover, it does not explain why some banks facing very sharp deposit withdrawals continued to lend throughout the crisis. In order

to shed light on these questions, I now turn to document the functioning of the discount window of the BdE with a focus on the role of the discount rate, the eligibility of collateral and the identity of borrowers.

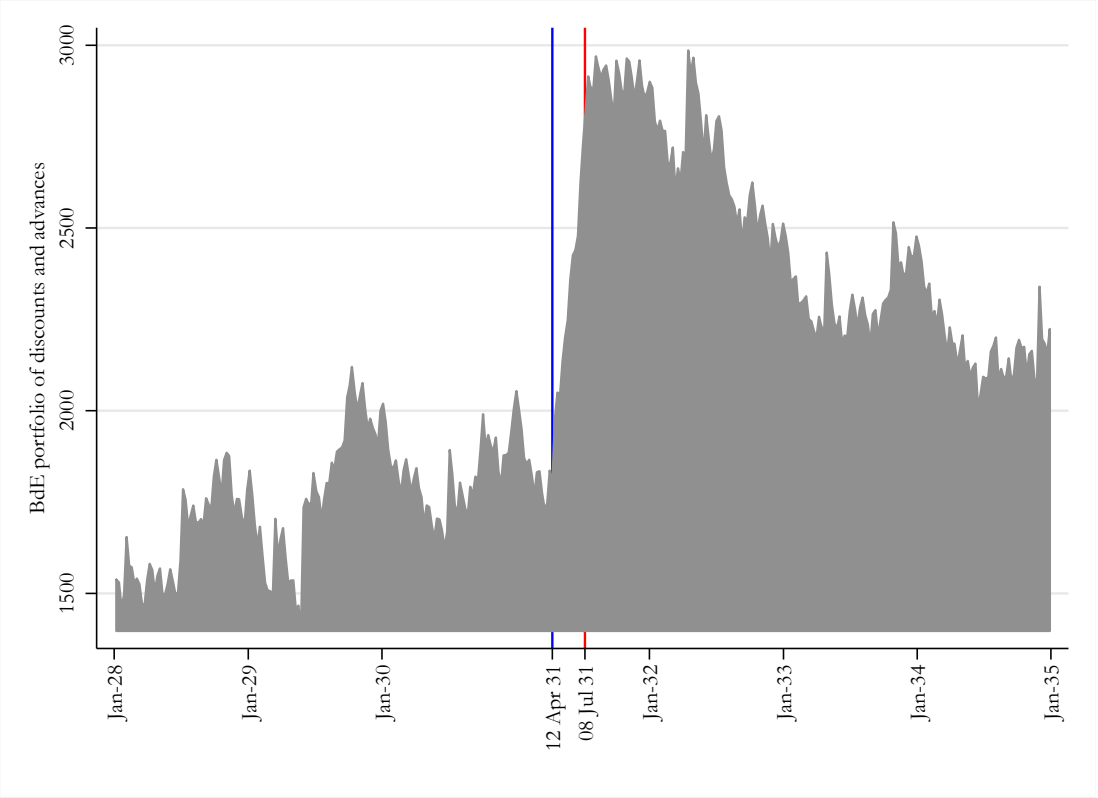


Figure 4.1: Discount and Advance portfolio, BdE (1928-35)
Source: Martínez Mendez (2005).

4.4.1 Discount rate, eligibility and the identity of borrowers

After the First World War, the BdE began to interact with a larger pool of banks, following the 1921 Banking Law, which aimed at strengthening bank-BdE interaction. The BdE could lend to banks by the outright purchase of bills of exchange (rediscount) and by advancing credit against public debt and other securities as collateral (advances). As discussed in Chapter 2, the law had forced the BdE to accept public debt as collateral for advanced credit to banks that abode by the liquidity and capitalization rules of the CSB. However, the BdE still retained discretion in discounting bills of exchange. In contrast with the majority of European economies at the time, Spanish banks accessed the discount window of the

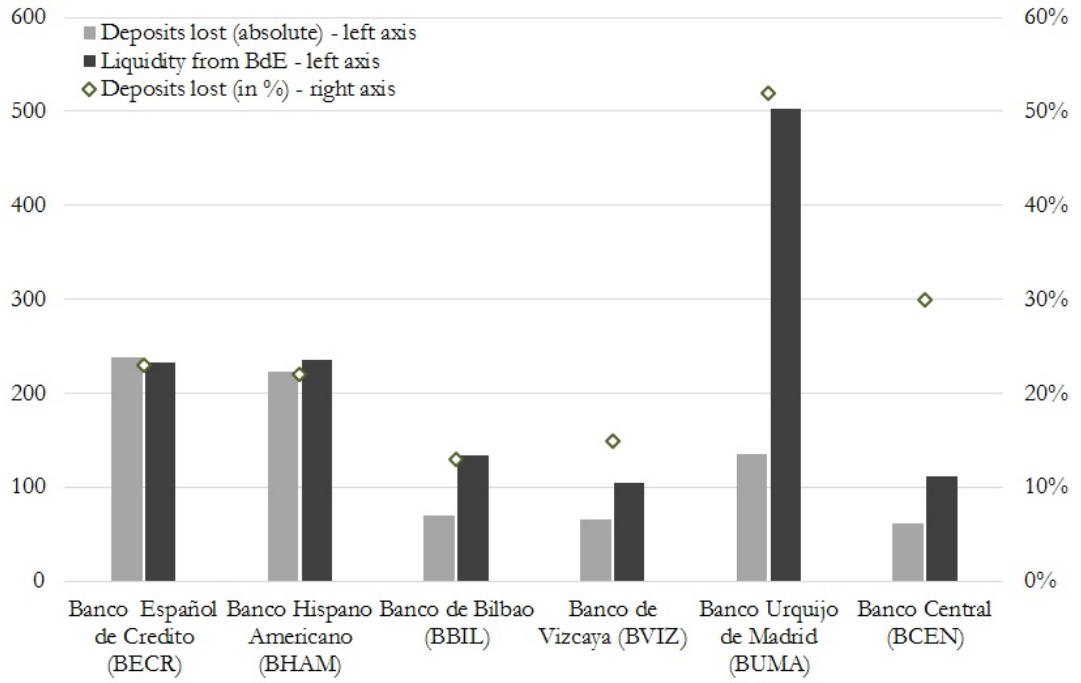


Figure 4.2: Top 6 banks deposit losses and access to BdE discount window (1931q1-1931q3)

Source: own calculations using *Actas de la Comision de Operaciones del Banco de España* and *Boletines del Consejo Superior Bancario*.

Banco de España at rates that were below the ones banks charged their clients[198]. As part of the banking regulation put in place after the First World War, banks could not under-price the BdE when discounting bills in the market[199]. In Spain, a bank would discount a bill to a firm and, provided that it was eligible at the discount window, could re-discount it at the BdE at a lower rate (Figure 4.3). In addition to the fact that BdE rates were below market rates, the use of interest rates was very scarce. Martín-Aceña (1984) documented that, throughout the 1920s and 30s, the BdE refused any change in interest rates as a monetary policy measure, despite this was the only tool available given the content of the 1921 Banking Law. As I documented in Chapter 2, the main argument that the Board of the BdE would use was that changes in interest rates would cause a contraction in credit and did nothing to smooth exchange rate volatility[200]. As opposed to other central banks operating under the restrictions of gold convertibility (and in contrast with the Bagehot Rule) in Spain the price of emergency liquidity from the central bank was not reactive to demand conditions[201].

According to its Statutes[202], the BdE would not discount any bill of exchange with a maturity longer than 90 days. It would also require eligible bills to carry

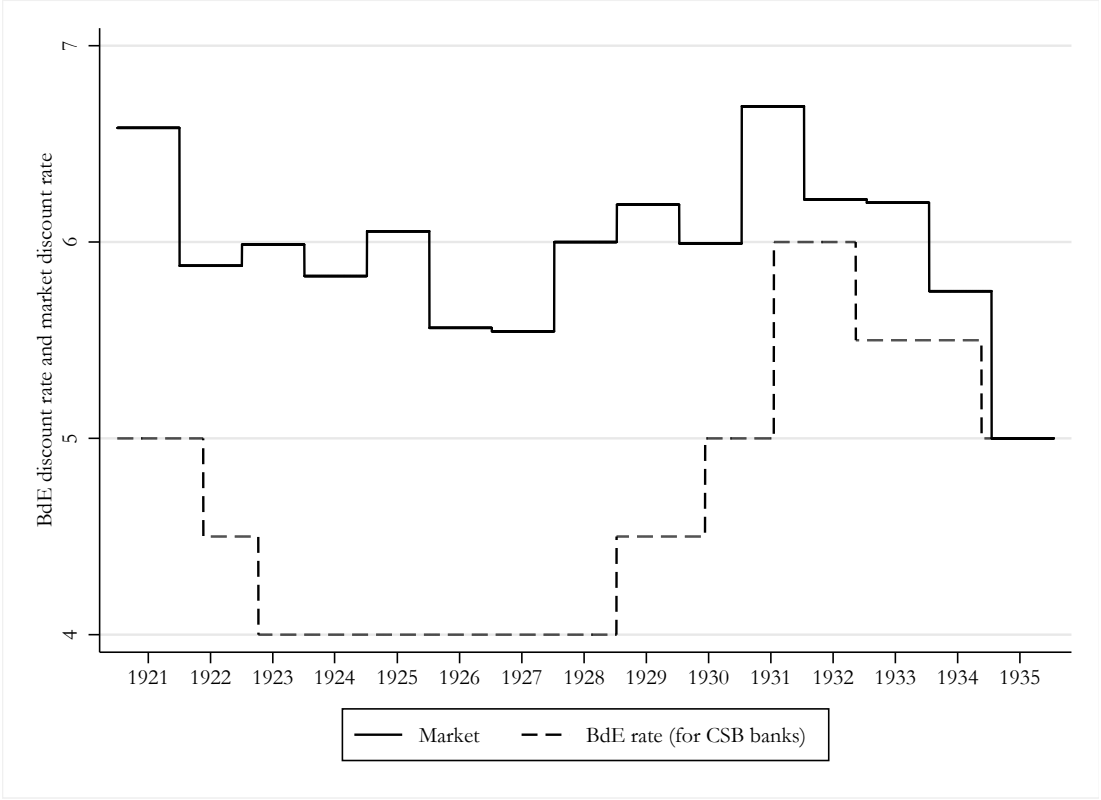


Figure 4.3: Market and BdE discount rate for 3-month bills of exchange (1921-1935)

Note: changes in BdE rate are placed exactly on the day they happened. Since market rates are averages of annual rates reported at the end of the year, they are annual averages, and changes should not be interpreted as happening on a specific date. Source: see Appendix.

two signatures at least, but one of them could be replaced by the pledge of assets that the BdE would select at its discretion[203]. Moreover, bills would have to be, *"endorsed or accepted by individuals, merchants, industrialists, companies, commercial associations, of industrial or agricultural nature, of known solvency, according to the information or previous information gathered by the Board of the BdE about the discounter"*. The Banco could also deliberately choose to admit or refuse the discount of a bill, without any explanation of the underlying reason.

Regarding advances or Lombard credit, the BdE would not lend for more than 90 days (although in practice these operations were permanently rolled over), for which it could accept a variety of collateral. Apart from public debt, which it had to accept from all CSB members, other collateral acceptance was left largely at the BdE's discretion. It could lend against gold, silver, public debt, mortgage bonds, railway bonds or other industrial and mercantile securities, *"that the Governing Board will previously have designated; all of them under the conditions of*

market value and considered enough by the Board as guarantee of the loan"[204]. While banks' use of this lending facility grew fast after 1921 (as discussed in Chapter 2) banks' reliance on it was only a viable strategy for banks as long as the price of public debt was relatively stable. When the price of public debt collapsed between April and October 1931, it became more expensive for banks holding public debt to use it as collateral for emergency borrowing. While portfolios of eligible bills of exchange retained the same liquidity that they had before the crisis, for every unit of public debt, banks would get less advances from the BdE[205]. Therefore, holding an eligible portfolio of bills before the crisis was an advantage. But what determined the eligibility of these bills?

Contemporaries highlighted the lack of transparency in regards to eligible collateral at the discount window of the BdE. In 1933, Sardà and Beltran (1933) wrote[206]:

> *"This is one of the most discussed issues in Spain. Currently, it is not possible to know neither what or to whom the Banco de España discounts to private banks nor what they bring to the Banco for discount. One is left to believe that, following the modern trend, the Banco is rediscounting more that in other periods, but it is not possible to make a statement on this side. It would be convenient that the Banco explained this when it publishes its balance sheets"*

In contrast with more developed money markets, in which the eligibility for bills of exchange was defined by a clear classification and widely known by all actors involved in the money market[207], eligibility at the discount window of the BdE remained opaque. Since the 1921 Banking Law had provided CSB banks with granted access to the discount window of the BdE by the pledge of public debt, problems associated with eligibility of commercial bills of exchange remained a secondary concern for policymakers and observers precisely until the 1931 crisis. Absent a clear and widely known eligibility criteria, trust built on long term relationships mattered for a given bank's access to the discount window. Evidence gathered from the meetings of the operations boards of Banco Central (BCEN) and Banco Urquijo de Madrid (BUMA), confirm this and helps shed light on the importance of a frequent relationship with the Banco de España in understanding its lending policy. On one side of the spectrum we find BUMA, a historical client of the BdE, which had been operating under slightly different names since the late nineteenth century. This bank embodies quite explicitly the

importance of long term relationship in determining access to the discount window. In an interestingly premonitory statement, three months before the 1931 crisis, the Board of Governors of this bank urged its operations managers to[208]:

> *"(...) make sure that the relations with the Banco de España, with respect to the discounts are constant, giving preference in the discount to those signatures that could be doubtful, because doubts will increase in parallel with the need for discounts, and the pressure the BdE might experience in case it faces increasing demands that might emerge in exceptional circumstances."*

The quote has interesting implications for understanding eligibility criteria. First, the bank stressed the importance of frequent interaction with the BdE. Second, when borrowing, it was better to sell the BdE the *"dubious"* signatures first. This implies that according to BUMA, the BdE had less information on the quality of signatures. This makes perfect sense from the point of view of liquidity management at the bank level; if able to choose, banks prefer to keep their more liquid assets in their portfolio and use the relatively less liquid to borrow, or even risk-shift towards the central bank (Goodhart and Huang, 2005; Bindseil, 2014; Dreschel et al., 2016). However, this suggests that as Flandreau and Ugolini (2013) showed for the case of the Bank of England, the discount window of Banco de España was also not made of "frosted glass"; the BdE relied quite heavily on the identity of the discounter than on the nature of collateral itself[209].

That said, it could simply be that the BdE just looked at the signature of the acceptors of the bills, rather than at who did discount them. This does not seem to be the case. Say BUMA had accepted a bill that it considered dubious and wanted to rediscount it at the BdE. If the bill was protested and finally unpaid, BUMA would still be liable as the acceptor. In the case BUMA held a bill accepted by another bank, it would still be transferring risk to the BdE. It is more plausible to think that, as its portfolio of commercial bills of exchange had been declining since the mid 1920s, and as commercial banking expanded throughout the country, the BdE had lost market share and therefore information on the bill market and had to rely on second-best approaches to eligibility (i.e. the identity of the discounter). According to BUMA's minutes, this would happen without the latter properly screening the bill.

Finally, the quote shows that BUMA expected eligibility criteria to narrow

(or certainly not expand) if banks started to borrow more from the BdE using bills of exchange in an eventual liquidity crisis. Concerns over a tightening of eligibility criteria during an eventual crisis are confirmed by BUMA's minutes during the 1931 crisis. Again, addressing to its operations managers, the Board urged to[210]:

> *"Not discount any commercial bill for which we don't have complete certainty that represents a genuine commercial or mercantile transaction (...) even in that case, do not discount any bill for which we have total certainty that it can be rediscounted at the Banco de España."*

The contrast between both quotes (before and during the crisis) can only confirm that the common practice was that the BdE relied on the agency of certain banks when screening bills of exchange. Before the crisis, BUMA was concerned that the BdE could tighten its eligibility criteria, that is, that it would inspect bills brought to the discount window more thoroughly if economic conditions increased credit risk. As long as the BdE was not concerned by its own credit risk, however, it would purchase bills of what BUMA considered "dubious" signatures. In other words, as long as there was not a surge on demand for emergency liquidity from other banks, BUMA could transfer credit risk to the BdE by counting on a lax eligibility criteria by the latter. This is consistent with BUMA's perception of its own relationship with the BdE[211]. When discussing the bank's participation in the capital of Banco Aragonés de Crédito (BARA), the Marquis of Urquijo, the main shareholder of the bank, would meet with members of the Board of BARA in order to[212]:

> *"(...) provide moral evidence that the bank* [BARA] *will have the same protection from the Banco de España and to discuss to which extent including the name Urquijo on its name could have an influence on that."*

A contrasting experience can be found in the minutes of Banco Central (BCEN) also one of the oldest banks in Madrid (which operated under different names over time). In contrast to the arm's length relationship that seemed to operate between BUMA and the BdE, BCEN had to be much more careful. In many instances, BCEN would have to check with the BdE if a given bill would be eventually accepted for rediscount before discounting it to a third party. In other words, BCEN could not afford to hold bills with questionable signatures. For example,

in 1925, six years before the 1931 crisis, the minutes of its Board of Operations reads[213]:

> *"(...) the board agrees with the discount operation as long as the Banco de España shows complete conformity and ensures the re-discount of the bill. (...) after having asked the Banco de España, they ensure us that they will rediscount the bill if needed. (...) the bill can only be discounted under the condition that is re-discountable at the Banco de España. (...) not provide credit unless this is going to be allowed for re-discount at the Banco de España."*

As opposed to BUMA, who could rely on the BdE not screening collateral at the bill level, BCEN had to ask to the BdE before discounting a bill in the market if the bill in question would be rediscounted. While there was a rationale for both screening strategies by the BdE, these reflected very different ex-ante conditions when accessing the discount window of the central bank for the two banks. Going back to the quote from Sardà and Beltran (1933) at the beginning of the section, it seems that observers were right. There was not a clearly defined eligibility criteria for bills of exchange. This was not an obvious problem as long as banks could rely on accessing the discount window of the BdE by pledging government bonds. As long as the price of public debt remained relatively stable, this was a safety valve for banks' management of liquidity. However, between April and October 1931, the price of public debt fell rapidly, and it became comparatively more expensive to borrow using advances, while the rediscount rate remained untouched until early July.

The fact that eligibility criteria was not widely known or uniform does not mean that this problem originated at the BdE. As Chapter 2 shows, following the 1921 Banking Law, banks were given a clear incentive to rely mostly on public debt to borrow from the BdE. The evolution of the money market after the mentioned law could have well played a role in limiting the specialization of the bill market in a way that commercial bills of exchange would never end up being classified under clear and widely-known eligibility criteria and became the main money market instrument. Eligibility mattered because this marked the difference between banks' being able to rely on the BdE for liquidity with two types of collateral (bills and public debt) instead of only one (public debt).

If eligibility mattered, did the BdE tighten eligibility criteria for bills during

the 1931 crisis, as BUMA had anticipated? From the very onset of the crisis, the Banco expressed its concerns over the commercial nature of the bills that it was ready to purchase from banks. A follower of the so-called "real bills doctrine", the BdE was concerned that providing credit for operations that did not have an underlying real transaction was inflationary. Bills purchased during the crisis had to be self-liquidating, as they were referred to at the time. This is clear from the BdE's statement three days after the proclamation of the Republic[214]:

> *"(...) the assistance that is provided to private banks must be consistent with their healthy policy and the current circumstances, with the final aim of avoiding an excessive increase in the volume of circulation, and thus affecting the external value of the currency and the price level (...) in order to avoid affecting self-liquidating 90-day bills of exchange, banks should restrict the credit operations that involve financial bills (...)".*

According to its own stance, the BdE discouraged banks to hold financial bills, as they would not be rediscounted. This is consistent with the evidence presented above from the minutes of BUMA, which, after the crisis insisted its managers to avoid discounting financial bills in the market. Unfortunately, as I explain in the Data section, daily operations used in this paper do not contain information on the specific details of the bills purchased by the BdE (drawer, drawee, acceptor, etc.). As Sardà and Beltran (1933) claimed, we don't know *what* did the BdE purchase from banks, nor what they brought to the discount window (so we have no information on bills rejected), apart from the rules that we can read in its Statutes. However, the evidence presented in the following section suggests that eligibility remained opaque and was certainly not widened during the crisis; pre-crisis lending practice seems to have determined lending during the 1931 crisis.

4.5 Allocation of liquidity at the bank level

Until May 29th, when the Government introduced capital controls and expanded the fiduciary issue limit, banks effectively competed for central bank liquidity. Even if borrowing data at the bank level was not available for the public, contemporary observers were aware of some banks borrowing from the BdE what was considered *beyond their needs* during the months when the latter was facing

limitations to lend freely. In fact this was seen as a reason why the fiduciary issuing limit had to be expanded. Observers claimed[215]:

> *"(...) there seems to be elements, including banks, that, be it for an excess of precaution or to benefit from the reduction in the discount rate they enjoy,* [i.e. the 100bp bonus CSB banks enjoyed when re-discounting bills] *despite having received already important amounts of liquidity from the Banco de España, they turn up at the discount window with large bill portfolios for rediscount.".*

Precisely as explained by Bagehot in *Lombard Street*, banks were running on the central bank and the latter was unable to service all banks' needs. In this section I conduct an empirical analysis and provide qualitative evidence of the determinants of allocation of liquidity at the bank level. First, I describe and discuss the metrics used to define allocation. Then I run a simple regression analysis to try and find the predictors of allocation between April and October 1931. Finally I discuss the consequences of allocation by looking at banks performance after the crisis.

4.5.1 Determinants of allocation during the crisis

A central bank able to conduct outright purchases of securities across-the-board with specific institutions under a clearly defined eligibility criteria is less limited when coping with a market-wide liquidity crisis. Not being able to identify good pre-crisis collateral to purchase or not having a widely known definition for that, puts the central bank in a difficult position. It might have to tighten eligibility criteria to protect its balance sheet from problems associated with information asymmetries over the securities banks bring to the discount window, but this tightening might also worsen banks' liquidity problems. This is precisely the case in which the Banco de España found itself in 1931. The price of the most commonly used asset for securitized lending operations at the discount window of the BdE before the crisis–public debt–collapsed by more 20% between April and October (see Chapter 5). Holding bills of exchange that the BdE was ready to purchase gave banks a secondary source of liquidity in the presence of a confidence crisis on public debt. Political developments and rumours over a potential default, albeit not necessarily shared by the banking community or the BdE, increased the risk of securitized operations for the central bank, at the same time

that increased their cost for banks via larger haircuts. On top of that, liquidity provision was quantitatively limited by note issuing limits (see Chapter 3). With these limitations present, it is important to understand how aggregate liquidity was allocated at the bank level.

Measuring banks' reliance on LLR assistance

In order to answer these questions, I calculate two measures of liquidity provision at the bank level. The first one, that I call $Allocation_i$ is the same used in Chapter 3, while the second is the one provided by Bindseil (2014). For the sake of comparison, I reproduce the definition of $Allocation_i$ again here; it is defined by:

$$Allocation_i = \frac{\text{Liquidity from the BdE}_i}{|\text{Deposits lost - Cash lost}_i|} \tag{4.1}$$

where the term *Liquidity from the BdE*$_i$ is the sum of rediscounts and advances received by bank i between April and September (1931q1-q3)[216]. In turn, the term |*Deposits lost - Cash lost*$_i$| is the absolute value of of deposits lost minus the variation in cash during the same period. An $Allocation_i$ value of 1 implies perfect proportionality, as the given bank received enough assistance from the BdE to respond to its clients' deposit withdrawals, taking into account how much cash the bank used to do so before resorting to the BdE. If the variable takes a value lower than 1 (with a lower limit on 0) this implies that the representative bank is falling short of liquidity and, everything else constant, will have to contract the asset-side of its balance sheet. A bank having an $Allocation_i$ value greater than 1 is then receiving *excess* liquidity[217]. The distribution of values of $Allocation_i$ for the sample of banks is presented in Figure 4.4, in which I plot the kernel density estimates of the variable for the banks that accessed the discount window of the BdE during the crisis. The average value is 2.0, but the median is 1.1 and the mode is lower than 1. This implies that there is an important degree of variation within the sample that can be exploited to understand the evolution of the asset side of banks' balance sheets. Because of the definition of $Allocation_i$, however, if a bank borrowed from the BdE before the crisis, when it is not experiencing deposit losses, this measure can grow exponentially to take very large, meaningless values. Therefore, despite it is useful to analyse allocation during

the crisis, it can't be used to compare pre-crisis borrowing with crisis borrowing.

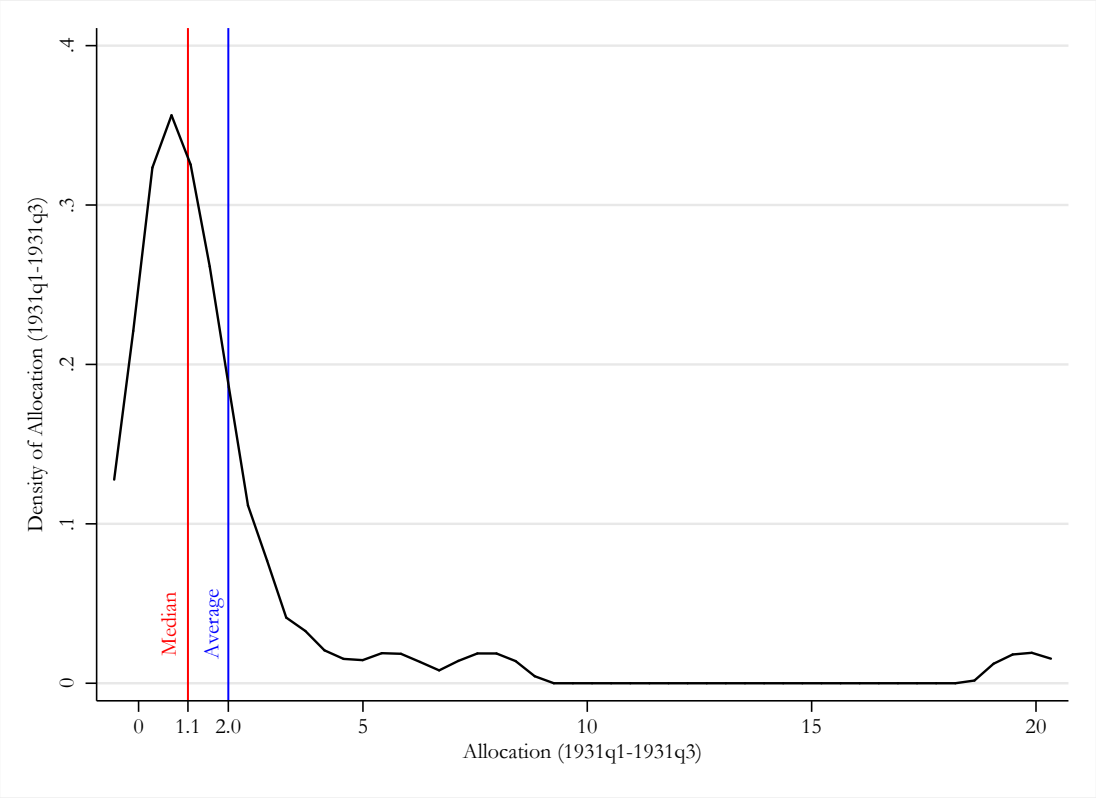


Figure 4.4: Allocation (1931q1-1931q3), kernel density estimates

Source: own calculations based on banks' balance sheets from *Boletines del Consejo Superior Bancario* and *Actas de la Comision de Operaciones del Banco de España.*

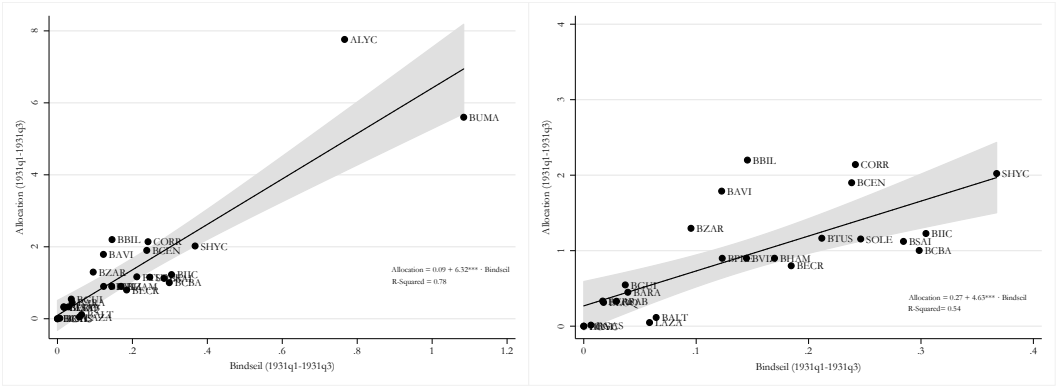
Instead, the measure proposed by Bindseil (2014) can be used. In this definition, in a system with n banks that can borrow from the central bank, the representative bank i keeps a balance sheet that satisfies the following equation[218]:

$$L_i = D_i + B_i \tag{4.2}$$

where L_i is bank lending, D_i are deposits, and B_i is credit from the central bank. In turn, the central bank balance sheet satisfies:

$$B = \sum_{i=1}^{n} B_i \tag{4.3}$$

where B are banknotes, which is equal to the sum of all credit provided to each bank, denoted by B_i. In Bindseil's model, aggregate proportionality is defined



(a) Full sample (b) Ex. outliers

Figure 4.5: Correlation between the two LLR reliance measures

Note: right figure does not include FONZ (see text), and left figure does not include FONZ, ALYC and BUMA.

Source: own calculations based on banks' balance sheets from *Boletines del Consejo Superior Bancario* and *Actas de la Comision de Operaciones del Banco de España.*.

by:

$$P = \frac{\mathrm{B}}{\mathrm{L}} \tag{4.4}$$

which is the ratio between aggregate liquidity provided by the central bank and the length of the banking system balance sheet (total loans). In other words, it is a measure of how dependent is the whole banking system on central bank liquidity at a given point in time. Individual proportionality, which is what we are interested in measuring in this chapter, happens when:

$$P_i = \frac{\mathrm{B}_i}{\mathrm{L}_i} = P \tag{4.5}$$

that is, when dependence on the central bank is the same for all banks. Thus, a bank with $P_i > P$ is overrepresented in the central bank balance sheet, while the opposite means a bank is underrepresented. Importantly, the two things can happen without causing banks to be under liquidity pressure or excess liquidity. Each bank's P_i might just be consistent with its portfolio composition. However, if banks suffer deposit withdrawals (a drop in D_i) at the same time that the expansion of the central bank balance sheet is limited (so B is fixed), then competition for limited reserves can have effects on banks' ability to keep their loan portfolios afloat (L_i).

Using one measure or the other depends on the goal of the analysis[219]. In Chapter 3 I use $Allocation_i$ because I want to understand the extent to which

liquidity provided by the BdE covered banks' deposit losses. In that case, I was not interested in understanding how much banks' borrowing behaviour changed between pre-crisis and crisis periods as I am here. For the sake of consistency, however, it is necessary to see if both measures provide a similar broad picture for the moment in which they are comparable. For the reasons explained above, this can only happen during the 1931 banking crisis (1931q1-1931q3) and not before. Figure 4.5 shows the correlation between the two measures during this period[220]. Unsurprisingly, the two measures correlate, both including and excluding outliers. Apart from the obvious fact that the two measures should correlate if they aim at measure the same thing, it is interesting to note that the fact that the correlation holds also suggests that, as the next section shows, banks proportionality in the access to the discount window of the BdE did not necessarily correlate with their deposit losses.

Empirical estimation

I turn now to the empirical analysis on the determinants of allocation of liquidity assistance at the bank level. I run two different regressions. First I use $Allocation_i$ as the dependent variable in order to find out its determinants. Dependent variables innclude a number of measures of banks' characteristics before the crisis: size, portfolio composition, liquidity, capitalisation, deposit losses (during the crisis) and a dummy for top 6 banks. I include a measure of pre-crisis dependence on the central bank, which as explained above can't be calculated by the same formula used for $Allocation_i$. I introduce this measure by calculating the ratio between banks' borrowing from the BdE during 1931q1 and their total deposits. While this does not compare directly to $Allocation_i$, it is a rough measure of pre-crisis borrowing.

As results in Table 4.1 show, $Allocation_i$ can't be predicted by any conventional measure of bank characteristics or financial distress. Banks with a larger portfolio of securities seem to have received proportionally more liquidity. This is a relatively obvious finding, taking into account that the BdE could only purchase bills or advance credit against public debt[221]. Capitalisation also seems to have played a role in allowing banks' to borrow more from the BdE. More importantly, the size of the liquidity shock at the bank level does not correlate with banks' borrowing from the discount window, suggesting, as contemporary accounts documented, that banks underwent severe liquidity pressure during the

crisis. Finally, the only strong predictor of bank's borrowing during the crisis turns out to be their reliance on the BdE before the crisis[222].

Similar results are obtained using Bindseil (2014) measure, which is more robust to time comparisons. I run a similar regression but here I can include the same consistent measure of banks' reliance on the central bank. I calculate proportionality ratios given by Equation 4.5 both for pre-crisis and crisis periods. Results are presented in Table 4.2. I include the same covariates as in Table 4.1 but here the pre-crisis borrowing covariate is measured exactly in the same way as the dependent variable. Again, the only strong predictor of LLR proportionality at the bank level during the crisis is their pre-crisis borrowing. Being a frequent borrower from the BdE before the 1931 crisis made it more likely to borrow larger quantities during the crisis, regardless of the liquidity shock suffered by the bank in question. Importantly these results are not driven by banks' size or by the largest 6 banks. Excluding the main borrower from the BdE both before and during the crisis, Banco Urquijo de Madrid (BUMA), weakens the coefficient, but the correlation remains highly significant. Once BUMA is excluded, proportionality before the crisis maps into proportionality during the crisis almost on a one-to-one relationship.

	Dependent variable: Allocation (1931q1-1931q3)										
Size (1931q1)	0.154										
	(0.144)										
Bills/portfolio (1931q1)		-0.384									
		(0.959)									
Stocks/portfolio (1931q1)			1.071								
			(1.272)								
Public debt / portfolio (1931q1)				-0.407							
				(1.340)							
Securities/Assets (1931q1)					**2.402***						
					(1.331)						
Capital ratio (1931q1)						**3.463***					
						(1.948)					
Liquidity (1931q1)							0.330				
							(1.223)				
% deposit loss (1931q1-q3)								-0.781			
								(1.283)			
Top 6 (dummy)									0.213		0.898
									(0.097)		(0.346)
Pre-crisis borrowing										**6.646***	**5.813***
										(1.292)	(1.189)
Constant	-0.775	1.171***	0.741	1.209*	-0.530	0.412	0.916	0.863**	0.115*	0.570***	0.395**
	(1.714)	(0.394)	(0.439)	(0.583)	(0.905)	(0.426)	(0.550)	(0.391)	(0.049)	(0.190)	(0.181)
Observations	23	23	23	23	23	23	23	23	23	23	23
R-squared	0.052	0.008	0.033	0.004	0.134	0.131	0.003	0.017	0.184	0.558	0.669

Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Table 4.1: Determinants of allocation of LLR assistance (my measure). Size is ln(assets); Cap. ratio is (cap+res)/assets; Liquidity is (cash+bills+p.debt)/assets. Source: see text.

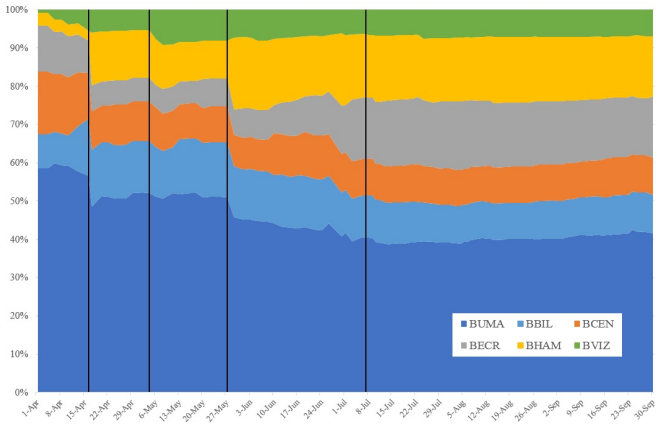
Dependent variable: Bindseil (2014) lender-of-last-resort proportionality											
Size (1931q1)	0.025										
	(0.028)										
Bills/portfolio (1931q1)		-0.096									
		(0.183)									
Stocks/portfolio (1931q1)			0.246								
			(0.241)								
Public debt / portfolio (1931q1)				-0.078							
				(0.256)							
Securities/Assets (1931q1)					0.382						
					(0.260)						
Capital ratio (1931q1)						0.405					
						(0.389)					
Liquidity (1931q1)							0.084				
							(0.233)				
% deposit loss (1931q1-q3)								-0.402*			
								(0.231)			
Top6 (dummy)									**0.213****		0.103
									(0.098)		(0.065)
Pre-crisis borrowing										**3.183*****	**2.939*****
										(0.509)	(0.515)
Constant	-0.130	0.201**	0.100	0.201*	-0.080	0.096	0.137	0.075	0.115**	0.078**	0.058*
	(0.330)	(0.075)	(0.083)	(0.111)	(0.177)	(0.085)	(0.105)	(0.070)	(0.050)	(0.032)	(0.033)
Observations	23	23	23	23	23	23	23	23	23	23	23
R-squared	0.039	0.013	0.047	0.004	0.093	0.049	0.006	0.126	0.185	0.651	0.690

Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

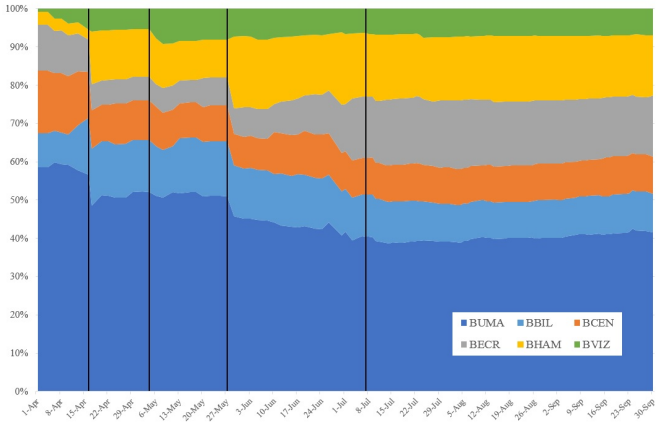
Table 4.2: Determinants of allocation of LLR assistance (Bindseil (2014) measure). Source: see text.

Results from the empirical estimation confirm the qualitative account presented in previous sections; frequent access to the BdE discount window predicts banks' borrowing during the crisis. This is not surprising, provided that the BdE did not have the same knowledge about all banks' portfolios of bills when they were brought to rediscount[223]. To provide further evidence, Figure 4.6a shows the shares of daily borrowing at the discount window of the BdE for the top 6 banks from April to September. Each of the three figures shows the distribution among these banks for all types of operations, discounts only and advances only, respectively. On aggregate, no significant change occurred in the pre-crisis borrowing patterns. Borrowing by rediscounting bills was very concentrated on Banco Urquijo de Madrid (BUMA), which never accounted for less than 50% of the BdE's purchase of bills of exchange, even if the bank represented only 4% of the banking system's total assets (Figure 4.6b). The share is remarkably stable over the main reference points shown in the chart: the beginning of the crisis (14 April), the first increase in note issuing limit (7 May), the second increase (28 May) and the discount rate hike (8 July). The case of advances is less stable as the crisis unfolds and shows much less concentration (Figure 4.6c). This is consistent with the fact that not all banks relied on the BdE for rediscounting bills, but their access to the discount window was done mostly through advances against public debt, as detailed in Chapter 2. In Figure 4.6c, some changes in the distribution can be seen during the days highlighted by the vertical bars. The advance window maps banks' relative size and the absolute loss of deposits better than the discount window, in which Banco Urquijo de Madrid (BUMA) seems to be overrepresented.

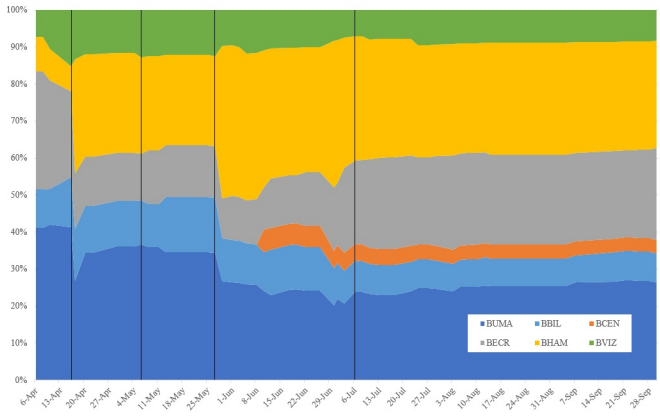
A relevant question here is the extent to which this overrepresentation just responded to differences in bank portfolios. It could simply be that BUMA held more bills (in absolute or relative terms) than the rest of banks, especially than the two largest banks that are clearly underrepresented in Figure 4.6b. Table 4.3 answers this question. It shows different measures of portfolio composition for the top 6 banks. Interestingly, BUMA held a relatively small portfolio of bills compared to those held by the largest banks (BHAM and BECR) who almost did not use them to borrow from the BdE (Figure 4.6b). In fact, according to the liquidity ratio presented in the last column, BUMA was the less liquid bank when the crisis started, mostly because of its large portfolio of private stocks. In general, BUMA does not stand out in any of the categories as an outlier in terms of porfolio composition, which suggests that the overrepresentation in the BdE



(a) All operations



(b) Discount



(c) Advances

Figure 4.6: Top 6 banks' share of discount window lending (April to September 1931)

Note: shares are calculated based on the cummulative borrowing at a given date. Source: author's calculations based on *Actas de la Comision de Operaciones del Banco de España* (see text).

discount window does not respond to that.

	Bills	Public debt	Stocks	Loans	Bills + p.debt
	as % of securities				
BBIL	16	49	36	49	65
BCEN	41	32	27	29	73
BECR	48	37	15	22	85
BHAM	40	46	13	43	86
BUMA	19	36	45	35	55
BVIZ	16	43	41	45	59
Average	30	41	30	37	71

Table 4.3: Top 6 banks' portfolios compared

Note: average shares for one year before the crisis (1930q2-1931q1). Source: own calculations, based on *Boletines del Consejo Superior Bancario*.

4.5.2 Borrowing before and after the interest rate hike

Bank borrowing started right after the 12 April local elections. After the first spike in borrowing, a second surge took place after the note issuing limit was timidly increased for the first time in early May. Only once capital controls were introduced and a second increase–this time larger–in the note issuing limit was authorized, banks returned to the discount window again. Finally, the last surge in borrowing took place as the 28 June General elections approached. On 8 July, borrowing came to a halt after the BdE raised the discount rate. Spanish monetary authorities only resorted to higher interest rates once bank borrowing from the BdE had been ongoing for three months (Figure 4.1). In fact, after strong pressure from the Government and aiming at stopping the collapse of the exchange rate, the BdE raised interest rates precisely because fiduciary circulation was increasing too fast:[224]:

> *"(...) the convenience of studying a moderate increase in the discount rate and other interest rates in order to regulate the fiduciary circulation, as suggested by the Ministry of Finance and the Government as a matter of public interest and convenience given the state of current affairs."*

After discussing the issue, interest rates were raised by 50 basis points in all operations with the exception of the Lombard rate on public debt. This exception should have had an asymmetric impact on banks depending on how did they

borrow from the BdE. On the one hand, those that used mostly public debt to borrow from the BdE were relatively less affected than those that used the re-discount of commercial bills of exchange. On the other hand, banks that were already *very* liquid by the time the interest rate was raised should have had more incentives to stop borrowing from the BdE, following Bagehot's rationale on the effects of interest rates on the efficiency of allocation of limited reserves. Unfortunately it is difficult to conduct a reliable sample-wide empirical estimation of these effects[225]. However, qualitative evidence at the bank-level can shed some light.

Discussion between CSB, BdE and the Government

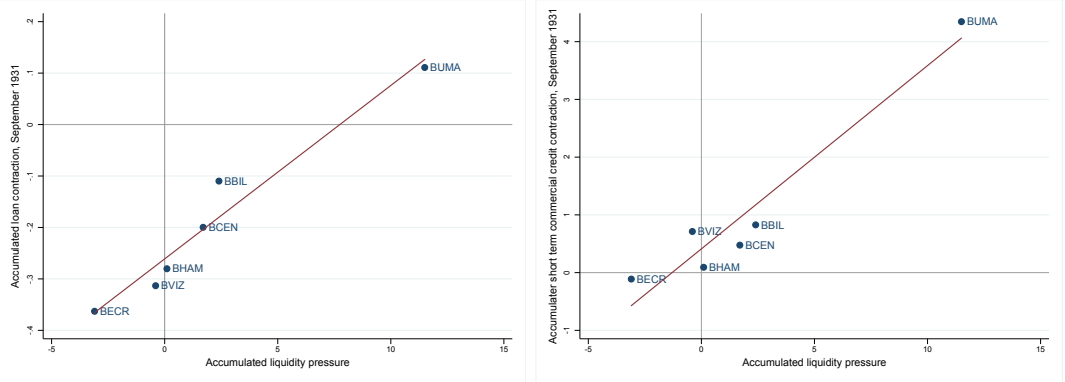
During his many interventions in the CSB extraordinary meetings that took place in April and May, the president of Banco Español de Crédito (BECR), Mr. Pablo Garnica, whose bank was experiencing the strongest liquidity pressure (Table 3.3), argued that concerns over the depreciation of the peseta were exaggerated and that increasing the issuing limit to provide banks with liquidity should be the priority. Interestingly, it was the most affected bank, the one that suggested that the government could cope with the run on the peseta and the banking crisis by following Bagehot's rule[226]:

> *"a solution might be that the Government would ask the BdE to increase the discount rate at the same time the note issuing limit is raised."*

It seems that given its severe liquidity needs, BECR was willing to pay more for emergency liquidity, revealing a very inelastic demand for central bank money. However, this rate hike did not take place until July, and in fact, Mr. Garnica himself concluded that this idea would probably be discarded by the BdE as this could affect domestic credit[227]. Did Garnica's concerns reflect in the balance sheet of BECR? How did liquidity shortages affect the asset side of bank balance sheets during the six months of the crisis, from April to September? And then, how did April and May liquidity shortages (before the BdE could lend *freely*) affect banks' loan portfolio?

In order to answer this question, Figure 4.7 shows banks' accumulated credit contraction and liquidity shortages between April and September. These are

calculated for each month as the sum of previous months' deviations from an optimal $Allocation_i$ value of 1. Any liquidity shortages in April are carried forward to May, and so on. The opposite applies if a bank becomes liquid at any given month. Therefore, a negative number means a bank remains under liquidity pressure. Figure 4.7a shows the correlation between the accumulated loan contraction and the accumulated liquidity pressure by September. The correlation suggests that banks ought to have been able to borrow much more from the BdE in order for the loan contraction to be smaller. Figure 4.7b plots the same but for short term commercial credit. In this case, the correlation is not that clear, but what this chart shows is that in presence of liquidity shortages, banks seem to have chosen to restrict loans instead of short term commercial credit. Both results are consistent with the regression results presented in Tables 3.4 and 3.5 in Chapter 3. In both figures, however there is a striking difference between BUMA and the rest. Within the rest, the bank suffering the largest accumulated liquidity pressure, BECR, is also clearly the one that contracted more loans. Data presented in Figure 4.8 shows the same correlations presented in Figure 4.7, but for loans and for each month. It was during May when the two extreme cases (BUMA and BECR) started diverging. Considering that the BdE was constrained until the very last days of May, this divergence shows the effects of banks' competition for funds. The allocation of emergency liquidity across different banks had distributional consequences on banks' ability to keep lending through the crisis[228].



(a) Loans (b) 3-month bills of exchange

Figure 4.7: Liquidity pressure and credit crunch, September 1931

(Note: the y-axis is accumulated loan (left chart) or short term commercial credit (right chart) contraction by September. The x-axis is accumulated liquidity pressure by September. Source: author's calculations based on Servicio de estudios del Banco de España (1935) and *Actas de la Comision de Operaciones del Banco de España* (see text).)

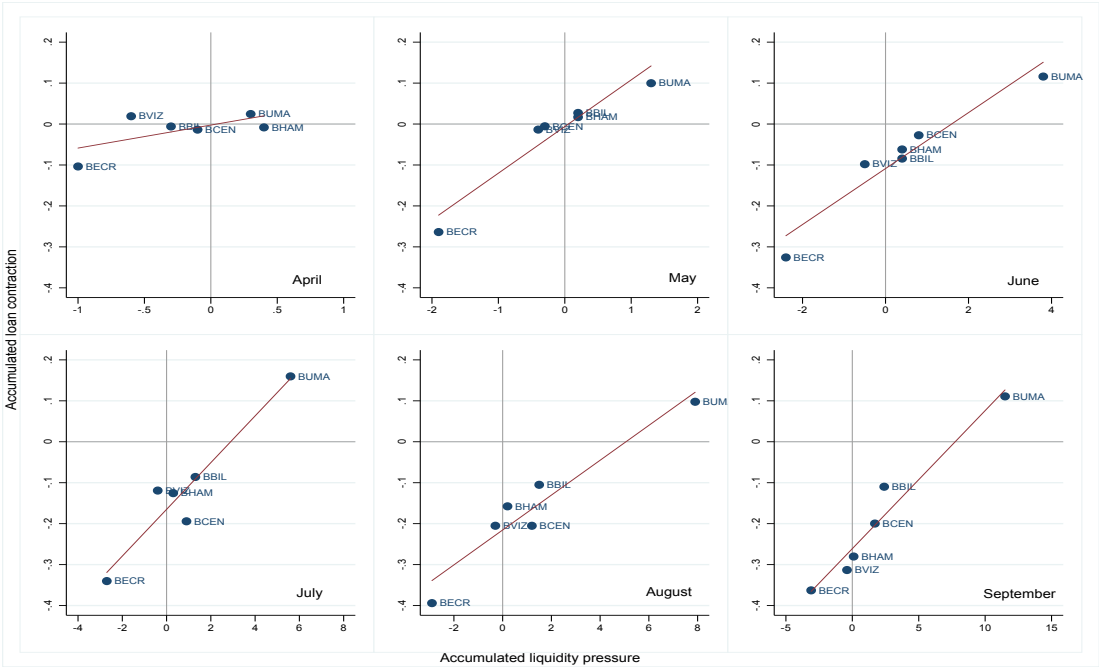


Figure 4.8: Liquidity pressure and loan contraction, April to September 1931

(Note: the vertical line crossing the axis a 0 represents no deviation from the ideal $Allocation_i$ value of 0. A deviation to the right implies accumulated excess liquidity. The opposite applies to the left. Source: author's calculations based on Servicio de estudios del Banco de España (1935) and *Actas de la Comision de Operaciones del Banco de España* (see text).)

All the evidence presented points to a credit crunch during the first months of the crisis, with banks' access to the discount window of the BdE being limited. Figure 3.8 and 4.1 show that banks' demand for emergency liquidity started right after the proclamation of the Republic, when the BdE conducted the largest operation, and then ceased until the Government authorized for the first expansion of the note issuing limit. Note that banks were under severe liquidity pressure during April, even considering the increase in the monetary base conducted by the BdE (Table 3.3). When the fiduciary limit was timidly raised on May 7th, banks resorted to the BdE again, but then stopped as the limit was reached again (Figure 3.8). Only after it was raised vigorously on May 29th, liquidity provided by the Banco de España could be injected without a *de facto* limitation. The sharp spike in borrowing that took place right after the limit was raised in late May reinforces the idea that all banks' liquidity needs could not be fully satisfied during the first two months of the crisis.

Following the initiative of the Government, the Banco started a discussion about raising interest rates[229]. On July 8th, the Banco agreed to raise the discount rate by 50 basis points, less than what the Government considered nec-

essary. To compensate his lack of influence in the BdE, on the next day, the Ministry of Finance reduced the rediscount bonus that had been granted by the 1921 Banking Law to banks by another 50 basis points[230]. Apart from curbing the increase in the provision of liquidity, with this move the Government also tried to restore some of the liquidity premium that public debt had over bills of exchange, since the Lombard rate was left unchanged[231]. The result was that the rediscount of bills became 100 basis points more expensive; the sharpest increase since the outbreak of the First World War and the highest nominal rate since the mid-nineteenth century. The increase in the discount rate had a clear and immediate effect on banks' borrowing. Discount window activity came to a halt the day after the increase in the discount rate (Figure 4.1). This was especially the case for Banco Urquijo de Madrid (BUMA); despite suffering sharp deposit losses it was very liquid already by July (Figure 4.9). The bank's borrowing pattern changed drastically when the discount rate was raised on 8 July.

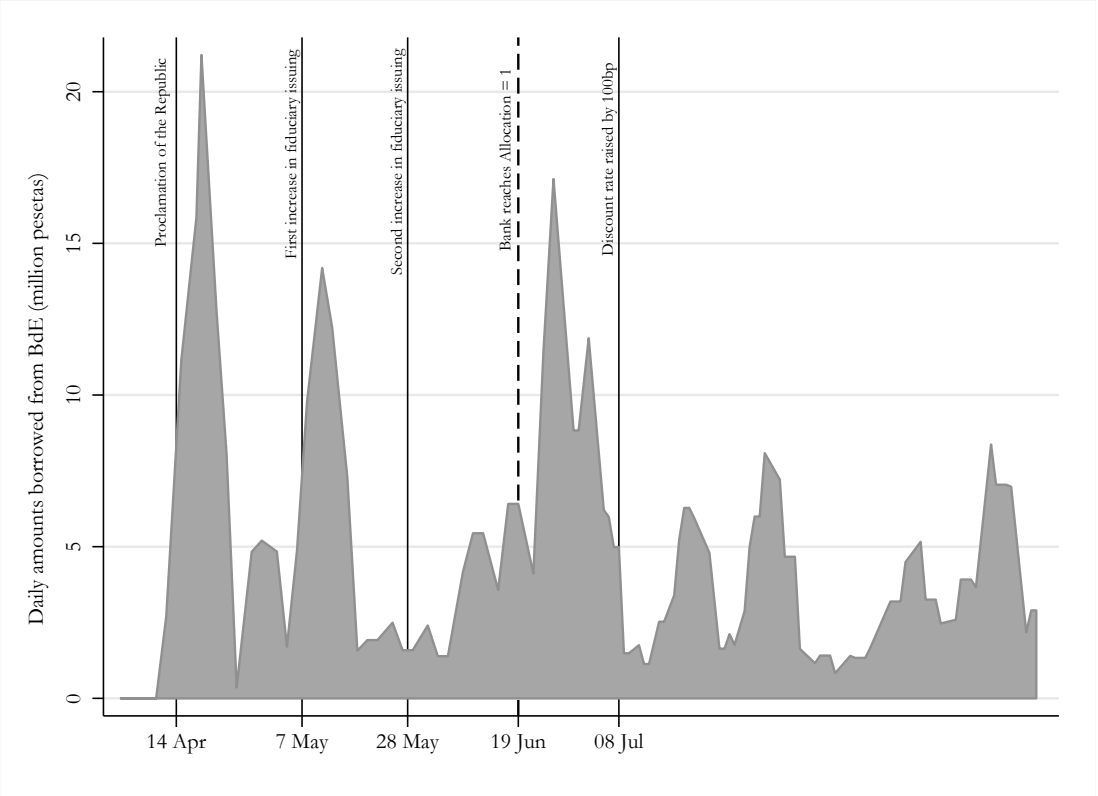


Figure 4.9: Banco Urquijo de Madrid (BUMA), daily borrowing from BdE
Source: *Actas de la Comision de Operaciones del Banco de España*

The BdE did not follow Bagehot's dictums. It could not do so. When faced with large and sudden demands from the banking system, its room for action

was limited; it could not lend entirely at banks' demand. Instead of allowing for an unconstrained increase in the monetary base and raising interest rates at the same time to protect the exchange rate (and the Banco's limited reserves), Spanish monetary authorities were capped by quantitative limits and left the discount rate unchanged, despite banks in deer need of funds were willing to pay more. When, capital controls were introduced and the BdE was freed from quantitative limitations, Bagehot's rule *had to* kick in and the discount rate was raised in early July. That the BdE did not follow Bagehot's rule from the very onset of the crisis—the only way it made full sense, as banks' price-elasticity of demand for central bank money was at its lowest—had nothing to do with the fact that it was operating an unconvertible currency, but with the institutional, political and economic context in which this intervention took place. Moreover, the money market in which the BdE operated, made Bagehot's rule even more difficult—if theoretically not impossible—to apply, because the price that banks paid for short-term liquidity at the discount window was not reactive to market conditions, unlike the money market that Bagehot had in mind when he wrote (Bignon et al., 2012; Flandreau and Ugolini, 2013). As described above, Spanish banks rediscounted bills with the BdE below market rates. Therefore, when a given bank faced liquidity needs, if it held eligible bills and there was still room for note issuing to increase, it could just obtain liquidity at the BdE without this having any effect on how much it would paid for it. This was a profitable framework for the given bank and for the BdE, provided that the former was willing to reveal the latter–still an effective competitor in many provinces—its private business information when it rediscounted a bill. However, when the 1931 crisis hit and all banks were under sudden liquidity pressure, quantitative limits prevailed and distributional problems appeared.

4.6 Consequences of allocation

How did the largest Spanish banks fare after the crisis? This section addresses this question by conducting two exercises. First, I look at the evolution of banks' balance sheets during the six months of the crisis. In particular, I am interested in the developments of April and May, when liquidity provision was constrained. Secondly, I look at the evolution of banks' dependence on the provision of liquidity by the BdE after the crisis. Here the goal is to show that crowding out between banks when borrowing from the BdE seems to have been persisent. Again, the

main illustration of this is Banco Urquijo de Madrid (BUMA).

During April and May, before the Government authorized for a large increase in fiduciary issuing, the BdE provided liquidity assistance to the six largest banks in Spain for a total of 309 million pesetas (dark green), while the same banks lost 310 million deposits (light grey). Figure 4.10 shows the monthly evolution of bank balance sheets between April and September 1931. These are aggregated figures that include the largest six banks for which there monthly data is available. It can be seen that on aggregate, during both months, LLR assistance almost covered all deposit losses. Banks also made use of their cash reserves to liquidate deposits (light green) and contracted credit (dark grey), albeit only in April. Variation in cash and credit appears in positive as it is a negative variation in assets that compensates the negative variation in liabilities caused by deposit withdrawals. The same figure also shows how, from June, when the BdE was no longer quantitatively constrained, borrowing surged; top banks borrowed 340 million pesetas in June (more than in April and May combined). Looking at aggregate figures, one would be pushed to conclude that there was no evident liquidity pressure; the system obtained enough liquidity from the BdE to liquidate deposits without having to contract credit. However, a look at disaggregated, individual data shows a different picture.

Figure 4.11 shows the same monthly variations between April and September 1931 but at the bank level. The story changes substantially. In particular, there is a sharp contrast between the evolution of Banco Urquijo de Madrid (BUMA) and Banco Español de Credito (BECR), especially during April and May, when banks were effectively competing for liquidity at the discount window of the BdE. During these two months, BUMA rediscounted bills and pledged public debt at the BdE for an amount that almost doubled its liquidity needs, while BECR did borrow almost nothing, despite it suffered twice as much deposit losses. As a result, credit provided from these banks to the real economy followed very different patterns. From April, but mostly in May and June, BUMA could expand its loan and bill portfolio, and continued to do so throughout the crisis. BECR, on the other hand, conducted a sharp contraction in credit until June, when the bank could borrow from an unconstrained BdE. The charts also show the evolution of the $Allocation_i$ variable I described above. While for BECR it reached barely 1 by the end of the crisis, for BUMA it soared from the very beginning. Considering the case of BECR, it is unsurprising that its President, Mr. Pablo Garnica

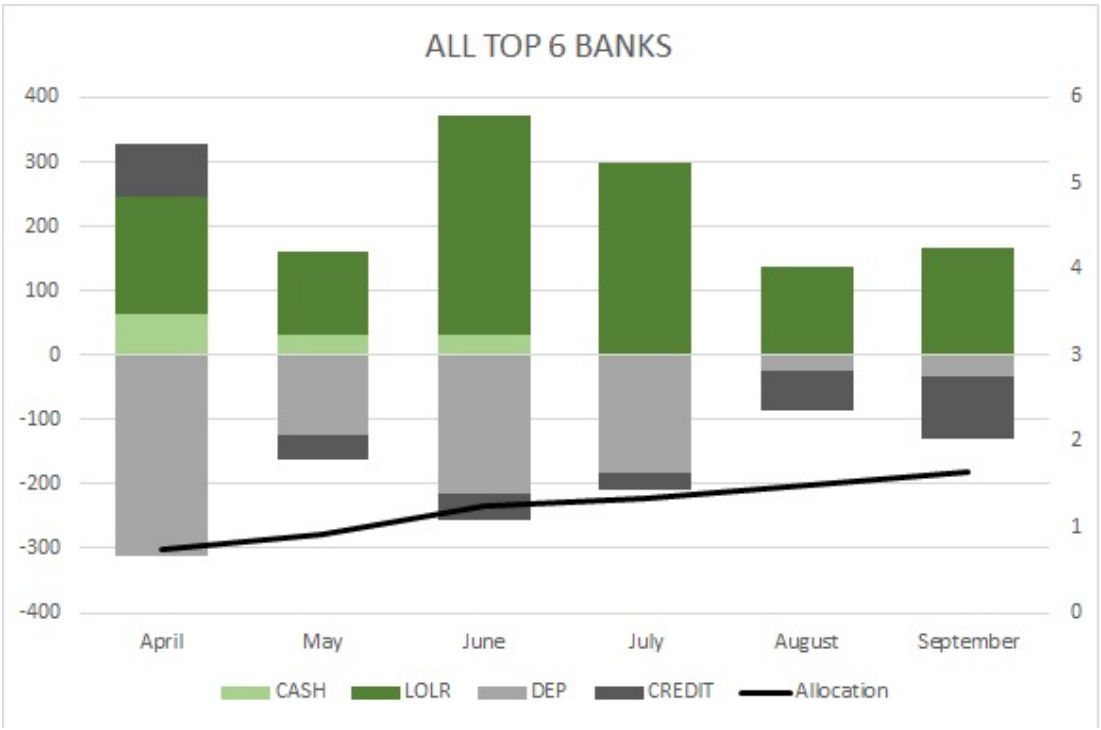


Figure 4.10: Evolution of Top 6 banks' balance sheets (Apr-Sep 1931)

Note: Figures are the month-on-month (mom) variation of each item of the balance sheet (LHS) for each bank and aggregated. CASH is the mom variation of cash reserves (a positive amount signals the bank is reducing cash reserves). LOLR is the total amount of rediscount and advances from the BdE. DEP is the mom variation in total deposits (a negative amount signals the bank lost deposits). CREDIT is the mom variation of the bank's bill portfolio net of LOLR rediscount and the mom variation of total loans (a positive amount signals that the bank is contracting credit). Allocation is the monthly value of the $Allocation_i$ as defined in Table 3.3 (RHS). Source: own calculations using *Boletines del Consejo Superior Bancario* and *Actas de la Comision de Operaciones del Banco de España.*

complained openly in the extraordinary meetings held in April and May about the BdE restrictions in rediscounting[232].

The contrast between BUMA and BECR is important, not only because it highlights the balance sheet effects of bank-level liquidity assistance, but because it shows the scope of the limitations that the BdE suffered when intervening as LLR during the first months of the 1931 crisis. Despite BECR was the largest and most widely branched bank in Spain and BUMA was a smaller, much more local bank, the latter managed to borrow enough liquidity to overcome the crisis, while the former conducted a sharp 36% contraction in loan portfolio. Looking at another bank's behaviour suggests a similar story; Banco de Bilbao (BBIL) also fell short of LLR assistance in April, although it borrowed more in May, after the first increase in fiduciary issuing. To compensate for that, the bank liquidated loans and contracted credit in April. In May, when it borrowed more from the BdE and did not lose deposits, the bank expanded credit back, something it did in every month in which it did not lose deposits.

How did banks' liquidity evolve once the worst of the crisis was over? Table 4.4 shows the change in liquidity coefficients for the top 6 banks calculated following a measure of bank liquidity provided by the BdE in 1935[233]. This comparison shows that BUMA was the less liquid bank already before the crisis but it was the only bank that managed to emerge from the crisis with a more liquid portfolio, despite it lost 56% of its deposits. How was this possible? Figure 4.12 answers this question. It shows the evolution of the relative importance of BdE credit over a bank's retail deposits[234] BUMA stands out as the bank that relied more on BdE liquidity to remain afloat. More importantly, the bank would have not been able to survive the 1931 crisis without the continued support of the BdE. Throughout the 1930s, the bank never recovered the 56% retail deposits it lost between April an September 1931. Therefore, the only way the bank could continue its operations was to extend its dependence on the BdE over time. By the end of 1934, while the rest of the banking system had returned to their pre-crisis levels of dependence on BdE liquidity, BUMA continued to rely entirely on BdE credit. In a way, during and after the 1931 crisis, the BdE absorbed BUMA.

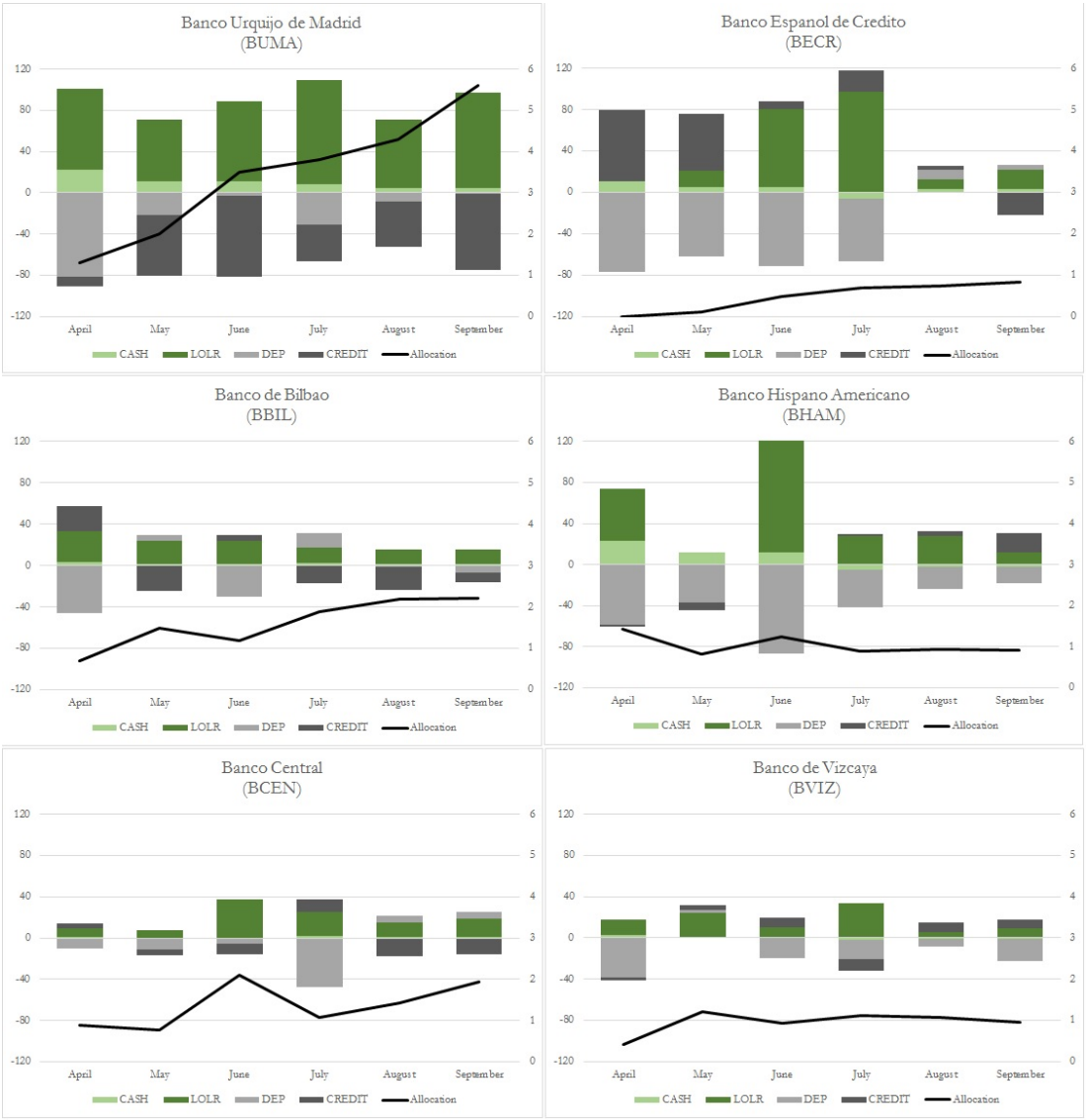


Figure 4.11: Evolution of each bank's balance sheet (Apr-Sep 1931)

Note: individual bank calculations are the same as in Figure 4.10. Source: own calculations using *Boletines del Consejo Superior Bancario* and *Actas de la Comision de Operaciones del Banco de España.*

	1931q1	1931q3	% change
BBIL	111	107	-3.60%
BCEN	97	90	-7.20%
BECR	109	104	-4.60%
BHAM	104	97	-6.70%
BUMA	**78**	**87**	**+11.5%**
BVIZ	122	104	-14.75%
Average	104	99	-4.80%

Table 4.4: Liquidity ratios for top 6 banks (BdE measure)
Source: own calculations, based on *Boletines del Consejo Superior Bancario* and *Liquidez Bancaria*.

4.7 Conclusion

This chapter confirms that the disaggregated figures about the distribution of emergency liquidity during the 1931 crisis in Spain tell a very different picture than aggregates. Looking at the whole banking system as one unit, liquidity pressure is difficult to find, and the contraction in credit does not seem to have any connection with that. Instead, in the absence of any obvious liquidity shortage, one is pushed to attribute the whole contraction in lending to an immediate deterioration of economic expectations that ought to have come along with the political regime change. While the latter undeniably mattered, disaggregated data adds nuance to the story. Not all banks fared equally. Some suffered very sharp liquidity shortages and some received excess liquidity. These differences explain banks' balance sheet evolution during the crisis. Importantly, the fact that the bank that suffered the most from the political regime change because of its religious and political ties–Banco Urquijo de Madrid–managed to expand its loan portfolio during the crisis despite losing more than half of its deposits points, if anything, to the contrary. There seems to be no obvious link between the regime change and a general panic among banks that caused the supply of credit to collapse. At least, this is not revealed by individual balance sheet data. Instead, what evidence presented in this section seems to suggest is that liquidity pressure caused by deposit withdrawals was too large for the BdE to assist all banks with enough liquidity.

The findings of this chapter suggest that Spanish monetary authorities' abandonment of interest rates as monetary policy tools during the crisis opened the room for a run on the BdE when quantitative limits prevented the latter from conducting a fully-loaded LLR intervention. Finally, the evidence presented also

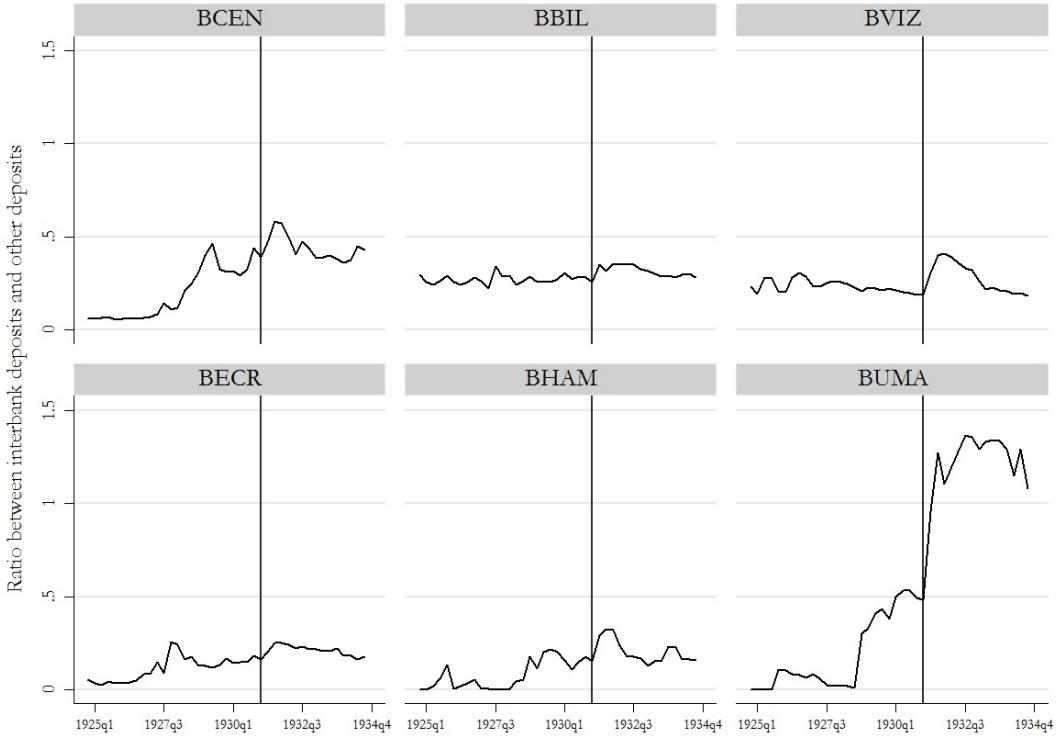


Figure 4.12: Top 6 banks' dependence on BdE liquidity (1925-1934)

Note: y-axis measures the ratio between interbank deposits (credit accounts at the BdE) and retail deposits.

Source: own calculations using *Boletines del Consejo Superior Bancario*.

highlights the importance of financial and money market development for the allocation of limited liquidity assistance in emerging economies. Repeated interaction between banks and the central bank, eligibility criteria, the transfer of credit risk to the central bank and the evolution of fiduciary issuing played a substantial role in determining how much and where emergency liquidity was allocated during the 1931 crisis in Spain.

4.8 Appendix

4.8.1 Reconstruction of the market discount rate: 1900-1935

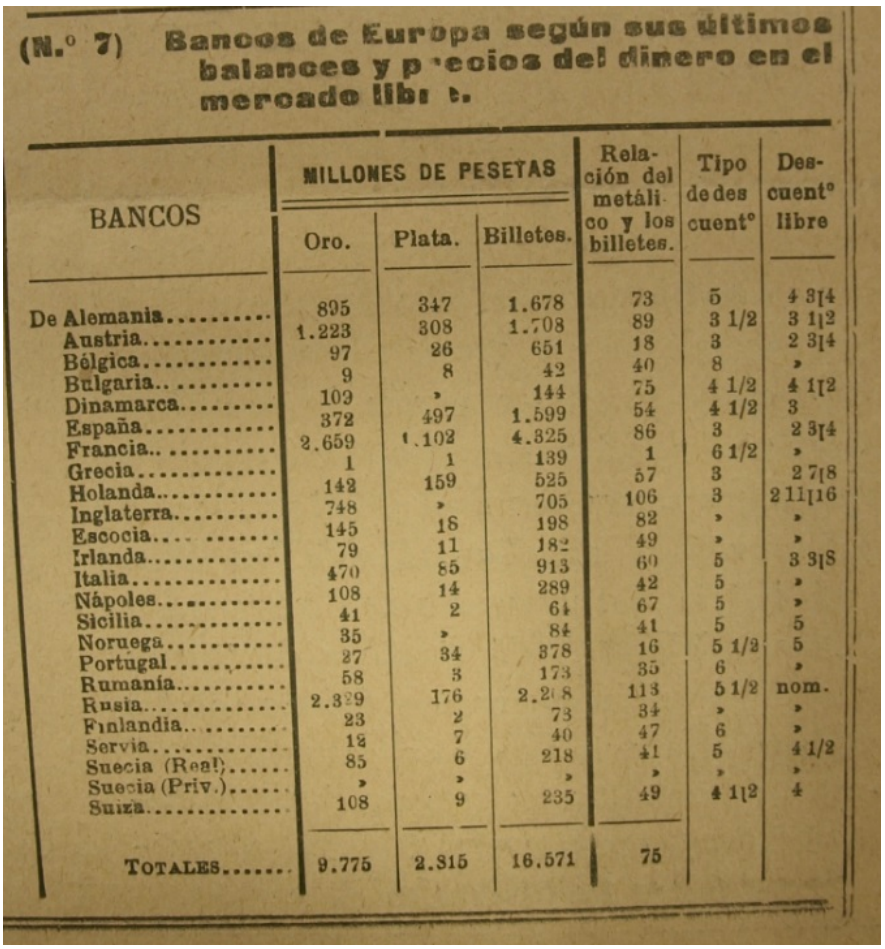
In this appendix I provide details of the methodology and sources used to compute a market discount rate for the whole period under analysis. Given the changing nature of the banking system and the money market before and after the First World War, this interest rate time series need a careful and prudent interpretation. However, the final picture I show provides many insights to understand the implementation of monetary policy in Spain in the first third of the twentieth century, as well as the changing role of the Banco de España in relation to the rest of the financial system.

The most remarkable facts that this new interest rate series show are:

- Before the WWI, the market rate was never above that of the Banco de España.
- From the summer of 1914, and as a consequence of WWI and its effects on international financial markets, the market rate in Spain soared above the rate of the Banco de España.
- After WWI, a new picture emerges. The market discount rate was always above the rate of the Banco de España, usually between 1.5% and 2.0% higher. This suggests that real interest rates in Spain were higher than what using the official BdE rate suggests.
- There is a degree of correlation between the official and the market rate, and the gap between both rates was reduced during the 1931 crisis.

The market rate before WWI, from 1900 to August 1914

From 1900 until the 7th of August of 1914, the economic journal *El Economista* reported, on a weekly basis, the official discount rate of the Banco de España (*tipo de descuento*) versus what was called free market rate (*descuento libre*), along with the discount rate of the main European countries (Figure 4.13)[235].



(N.° 7) Bancos de Europa según sus últimos balances y precios del dinero en el mercado libre.

BANCOS	MILLONES DE PESETAS			Relación del metálico y los billetes.	Tipo de descuent°	Descuent° libre
	Oro.	Plata.	Billetes.			
De Alemania	895	347	1.678	73	5	4 3/4
Austria	1.223	308	1.708	89	3 1/2	3 1/2
Bélgica	97	26	651	18	3	2 3/4
Bulgaria	9	8	42	40	8	»
Dinamarca	109	»	144	75	4 1/2	4 1/2
España	372	497	1.599	54	4 1/2	3
Francia	2.659	1.102	4.325	86	3	2 3/4
Grecia	1	1	139	1	6 1/2	»
Holanda	142	159	525	57	3	2 7/8
Inglaterra	748	»	705	106	3	2 11/16
Escocia	145	18	198	82	»	»
Irlanda	79	11	182	49	»	»
Italia	470	85	913	60	5	3 3/8
Nápoles	108	14	289	42	5	»
Sicilia	41	2	64	67	5	»
Noruega	35	»	84	41	5	5
Portugal	27	34	378	16	5 1/2	5
Rumania	58	3	173	35	6	»
Rusia	2.329	176	2.208	113	5 1/2	nom.
Finlandia	23	2	73	34	»	»
Servia	13	7	40	47	6	»
Suecia (Real)	85	6	218	41	5	4 1/2
Suecia (Priv.)	»	»	»	»	»	»
Suiza	108	9	235	49	4 1/2	4
TOTALES	9.775	2.315	16.571	75		

Figure 4.13: *El Economista*'s official and market discount rates, Spain and other countries (1905)

Source: *El Economista*, 07/01/1905.

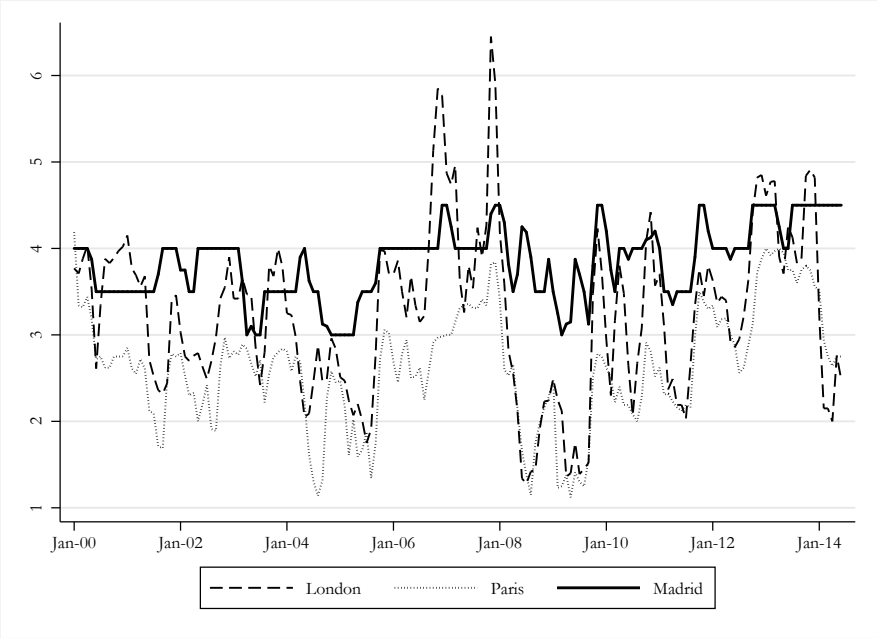


Figure 4.14: Market rates in London, Paris and Madrid, 1900-1914

Source: monthly average market interest rates, from (Jobst and Ugolini, 2016).

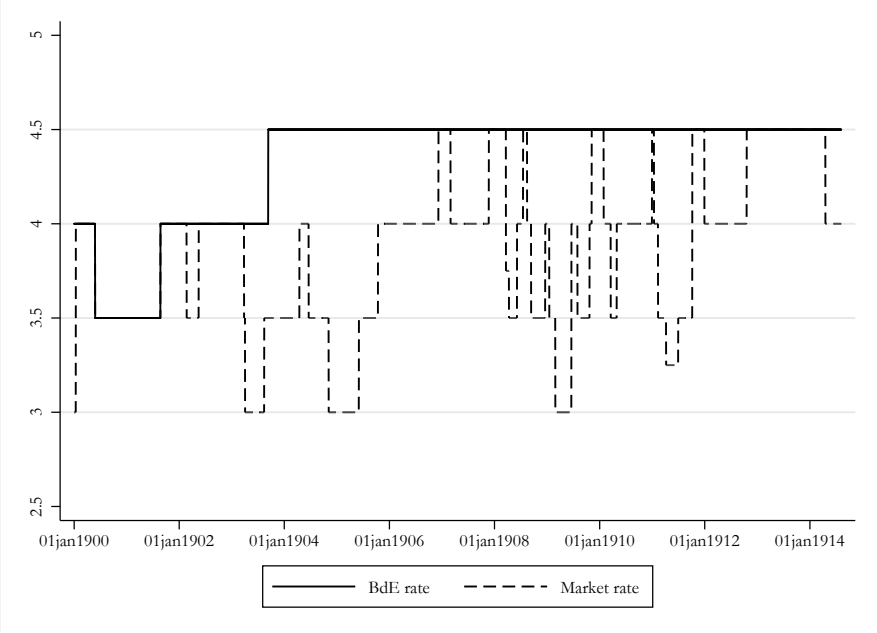


Figure 4.15: Official and market rates, January 1900 - July 1914

Source: *El Economista*, weekly data, from the first week of 1900 to 31 July, 1914.

The Spanish market rate exhibited a certain degree of correlation with international interest rates. For example, the rates in London and Paris did also correlate, to some extent, with the Spanish rates. During this period, the Spanish financial system, despite not being part of the classic gold standard system, was integrated, to some extent, in the international markets (Figure 4.14). An interesting fact is that despite the big spikes in interest rates that took place in 1906 and 1907, the Spanish market rate was effectively capped by the rate of the Banco de España (Figure 4.15).

However, the outbreak of the war changed the whole picture. The market that had existed until that moment dried and the market rate was never reported again. There was a financial panic, although it was rapidly contained. The first reaction of the BdE was a rise in interest rates. The Banco de Bilbao, an extremely well reputed bank, faced deposit withdrawals and cash shortages during the month of August 1914, and had to resort to the Banco de España. It obtained liquidity by pledging assets at the Banco de España. The Banco de Bilbao[236]:

> *"(...) had to reinforce the cash holdings, in case that the general alarm could affect the public and it could withdraw its deposits; (...) in order to prevent this, the Banco de Bilbao had managed to obtain material help from the Banco de España in Madrid, (...) and the council unanimously agreed to guarantee along with the rest of the signatories, the bills discounted at the Banco de España, and assuming any responsibility that could emerge from the operation (...)"*

Since then, while the journal *El Economista* continued to provide information about the discount rate of other central banks and the official rate of the Banco de España, it ceased to inform about the free market rate. The same journal was well aware of the far-reaching effects of the War over the Spanish banking system[237]:

> *"After two months since the War started, we can study its consequences in our banking system, (...). We can summarize it in one phrase: we have reached a truly concentration of banks around the Banco de España. (...) There was always a certain relation between businesses, firms, industries and banking houses, but now the relationship has become something like a dependence, because it has been*

necessary to ask the Banco de España for help (...) not only the weak institutions but also the healthy ones (...)".

According to this journal, then, the War caused the relations between the Banco de España and the rest of the financial system to become one of dependence, whereas before, relations were more occasional.

The "market" rate during WWI: from August 1914 to 1919

With the outbreak of the War, the Spanish money market dried, just as all markets in Europe. Because there was no moratoria of payments declared in Spain, firms and banks continued to need short term liquidity to face their payments. As *El Economista* had put it, relations between the banking system and the Banco de España had become more intense. Despite the limit of notes issued was increased on the 5th of August 1914[238], the Banco had to rise the interest rate sharply. The Banco de España rose the interest rate from 4.5% to 5.5% on the 8th of August and kept it at that level until the 5th of September, when it cut it to 5.0%. By the 26th of October, it reduced it again to the pre-War level of 4.5%.

For the period August 1914 until December 1918, I derive the "market" rate from a different source. Given the absence of a free market discount rate, I proxy the evolution of the discount rate for firms and other banks by using the discount rate reported in the minutes of the board of the Banco de Bilbao (*Actas de la Junta de Gobierno del Banco de Bilbao*) and the Banco de Vizcaya (*Actas del Consejo del Banco de Vizcaya*). These banks' boards had regular weekly meetings and reported every change they implemented in the discount rate. Although they used the word "discount" to refer to a number of different operations, they detailed the different rates they applied for each one. I take the discount rate applied to the purchase of bills of exchange and promissory notes, which was usually lower than the one applied to Lombard credits. In total, the discount rate changed four times, and followed the same pattern as the official rate of the Banco de España: first a sharp increase and then a progressive decline. Interestingly, the market rate rose above that of the Banco de España for the first time during the 1900-1936 period and never fell below again (Figure 4.16). Before the War, a firm could discount a bill below the official rate in the market and thus compete with the BdE in the bill market. After that, banks would not be allowed to discount bills below the BdE rates (see Chapter 2).

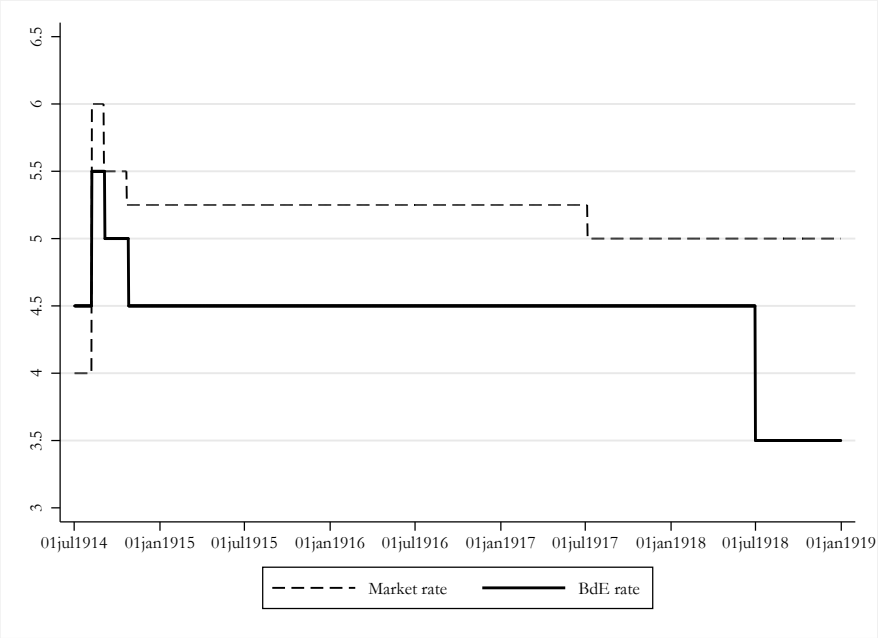


Figure 4.16: Official and market rate (1914-1918)

Source: *El Economista* and *Actas de la Junta de Gobierno, Banco de Bilbao.*

While the Banco de Bilbao had a deep knowledge of the market in which it had been operating since 1857, the Banco de Vizcaya was a relatively younger bank, as it was founded in 1901. Before the 7th of August of 1914, the Banco de Vizcaya discounted bills of exchange at 4.5% if they were until one month to maturity and at 5% if they were until 3 months (it also applied different rates depending on the solvency of the signatures)[239]. On the 7th of August, it raised its discount rate to 6% for all types of bills[240]. The Banco de Bilbao followed the same pattern; it had been discounting below the official rate for the whole pre-war period, almost constantly at a 3.5% rate[241]. On the 7th of August, the Banco de Bilbao also raised its discount rate to 6%, given the *"abnormal situation of the European market and given the rise in the discount rate of the Banco de España*[242]. A month after the rise, on the 3rd of September, the Banco de Bilbao cut its discount rate to 5.5%[243]. On the 22nd of October, it was able to reduce its discount rate on bills discounted over other cities to 5%, while kept the rate in Bilbao at 5.5%[244]. Finally, on the 5th of July 1917, it cut again the discount rate to 5% on bills over Bilbao and 4.5% on bills over other cities[245].

One might be skeptical about the explanatory power or the exact meaning of this interest rate, and it is certainly a *sui generis* market rate, since the traditional free market rate ceased to exist, along with the market in the shape it had before the war[246]. However, the point that is made here is that the financial

freezing that the War caused across Europe and that suspended temporarily the money markets, had permanent effects in the Spanish money market. In most European countries, the market resumed more or less shortly after the War, and in some it did not freeze permanently during the conflict (Jobst and Ugolini, 2016) but in Spain it changed permanently, and would change even more in the years to come.

The absence of a frequently reported market rate reduces the explanatory power of the discount rate applied by only two banks (Bilbao and Vizcaya). After all, these two banks were in the same area and by 1917 they had not yet started to develop their extensive network of branches across Spain so they could not reflect an average state of the bill market in Spain. One must interpret the exact level of the rate and its variations carefully because, after all, banks could very well apply different rates to different clients following their own discretionary criteria. In addition, different banks in different cities might well have applied different rates. However, I argue that this is not against the argument presented here, for many reasons.

First, the point being made is that banks (and potentially the remaining bankers) ceased to discount below the official rate and started discounting above it. The exact level is not crucial to illustrate the change in the model of central banking that took place. Second, the fact that the Banco de España was present in nearly every corner of Spain and that it raised sharply the discount rate should have had an effect on the whole system, not only in the north, where both these banks operated. If the War had such a strong effect on one of the most reputed and solvent banks in Spain (Banco de Bilbao), we can expect the effect to have been, if anything, stronger in other cities such as Barcelona[247] or Madrid. So we can expect that other banks also had to raise their discount rates given the generalized shortage of liquidity. Third and perhaps more importantly, the banks of the north of Spain (mainly the banks of Bilbao and Vizcaya) had traditionally held the largest portfolios of public debt in Spain. Since 1921, the Banco de España was forced to accept public debt as collateral for Lombard credit at a privileged rate, which made it a very liquid asset. The Banco de España had been accepting public debt as collateral for Lombard credit since much earlier, although its preferred operation before the War was the discount of bills (as explained in Chapter 2). Having the largest portfolios of public debt that could be pledged at the Banco de España, these banks could afford to keep their commercial dis-

count rates low, because any liquidity shortage could be solved by pledging their public debt portfolio at the Banco de España without impairing their commercial strategy (i.e. having to rise their discount rate more than what was strictly necessary). In fact, the Banco de España would systematically apply a lower haircut in Lombard operations to banks in the area of Bilbao and the north of Spain in general (see Table 4.5). Finally, banks of the north of Spain were, on average, much more liquid than those in Barcelona or Madrid (Table 4.6). Therefore, I argue, the discount rates applied in the north of Spain can be interpreted as a lower bound of the rates available in the market for the years 1914-1919 . Given that the point that is made here is that the discount rate applied by banks in the market was never again below the discount rate of the Banco de España, the lack of more observations should not be against the argument for this purpose.

	Madrid	Bilbao	Barcelona	Weighted average
1902	46%	29%	47%	53%
1905	46%	25%	52%	44%
1910	43%	19%	49%	40%
1911	42%	19%	46%	39%
1912	42%	19%	50%	39%
1913	40%	18%	44%	39%
1914	45%	30%	51%	45%

Table 4.5: Haircut charged by the BdE to Lombard operations

Source: *Memorias de las Sucursales del Banco de España.*

	Madrid		North		Catalonia	
	R/K	R/D	R/K	R/D	R/K	R/D
1910	14%	9%				
1911	13%	8%	48%	18%	7%	5%
1912	14%	7%	48%	18%	7%	6%
1913	15%	9%	46%	16%	8%	7%
1914	15%		47%		9%	

Table 4.6: Reserves, capital and deposits of different banking areas

Note: R=Reserves, K=Capital and D=Current Accounts. Source: *Anuario Estadistico 1915, INE).*

The market rate after WWI, from 1920 until June 1936

Once the impact of the First World War suspended the operations of the money market, the discount rate that banks charged to the public never returned below

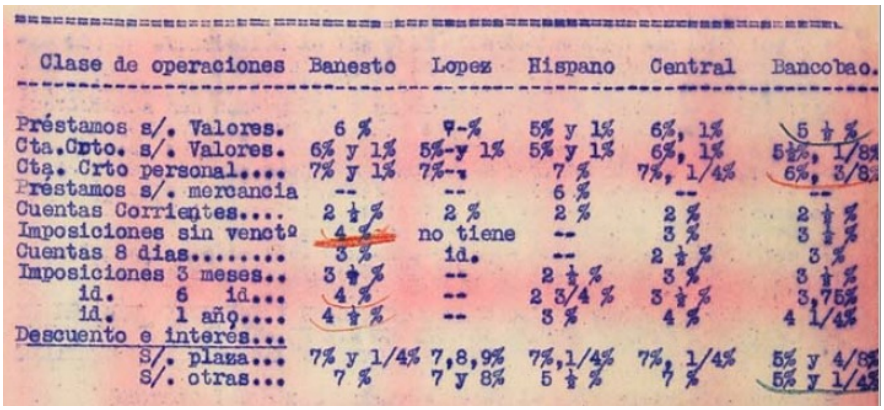
that of the Banco de España. After the War, banks could discount bills in the market at a rate that was, on average, 1.5% above the rate that the Banco de España would charge them to re-discount. In some cases the spread between both rates would reach 2.0% (as in 1925 and 1928). In fact, the minimum rate that the banks could charge for a discount in the market was limited by the CSB regulation and could never be below the official rate[248].

From 1918 and until 1936, the number of observations used to reconstruct the "market" interest rate improves significantly. Now that big banks were developing their nation-wide network of branches, their strategy was to reach the largest market share possible. Given their dramatic change in scale during the War, banks could now afford to open discount accounts to a wider public[249]. Although its precise interpretation still needs to be done carefully, I show that banks' discount rate remained above the official rate, and show a relatively strong correlation with the official rate charged by the Banco de España. To develop this market rate, I use a different source: the Annual Reports that the branches of the Banco de Bilbao sent to the headquarters.

Since 1918, the Banco de Bilbao started to open branches across Spain, after having established one in Paris in 1914 and in London in 1918. The newly opened branches of this bank, elaborated thoroughly reports in which they explained the situation of the market in each of the new cities in which were established[250]. They commented the economic dynamism of the village or city and also listed the main banks operating wherever they established the new branch. Some of the branches reported yearly information about the interest rates applied to discount and short-term credit operations by the banks that operated in a given city (Figure 4.17). Interestingly, the branches of the BdE were counted as other banks operating in the commercial business of a given city or village.

This index includes the discount rate of many different banks (the largest ones) for many cities. In total, I used the information available in the memories of the 47 branches of the Banco de Bilbao that were progressively established in relevant cities during the years 1918-1935 and that provided enough geographical diversity. Not all the branches reported discount rates for every year and city in which they operated and many did only report them occasionally[251]. To complement the index I use information from the Minutes of the Operations Committee of the Banco Central, a big bank from Madrid (the fourth largest in Spain), which

were reported—for some years—in the bank's daily operations books[252].



Clase de operaciones	Banesto	Lopez	Hispano	Central	Bancobao.
Préstamos s/. Valores.	6 %	7-%	5% y 1%	6%, 1%	5 ½ %
Cta.Crto. s/. Valores.	6% y 1%	5%-y 1%	5% y 1%	6%, 1%	5½%, 1/8%
Cta. Crto personal....	7% y 1%	7%--	7 %	7%, 1/4%	6%, 3/8%
Préstamos s/. mercancia	--	--	6 %	--	--
Cuentas Corrientes....	2 ½ %	2 %	2 %	2 %	2 ½ %
Imposiciones sin vencto	4 %	no tiene	--	3 %	3 ½ %
Cuentas 8 dias.....	3 %	id.	--	2 ½ %	3 %
Imposiciones 3 meses..	3 ½ %	--	2 ½ %	3 %	3 ½ %
id. 6 id....	4 %	--	2 3/4 %	3 ½ %	3,75%
id. 1 año....	4 ½ %	--	3 %	4 %	4 1/4%
Descuento e interés...					
S/. plaza...	7% y 1/4%	7,8,9%	7%,1/4%	7%, 1/4%	5% y 4/8%
S/. otras...	7 %	7 y 8%	5 ½ %	7 %	5% y 1/4%

Figure 4.17: Interest rates applied by banks in the city of Cordoba, 1927

Source: *Memoria-Informe Banco de Bilbao, Sucursal de Cordoba, 1927, p.3.*

An example is provided in Table 4.7, where the reader can find the discount rate applied in Madrid by the main banks. The homogeneity of the rates is evident, as well as the overall preference for commercial paper rather than financial or accommodating bills. This is consistent with the fact that the Banco de España was a strong exponent of the "real bills doctrine" in Spain, as it always expressed a strong preference for bills that emerged from a pure commercial transaction with "real" goods involved and in some instances it rejected discounts of bills that were not commercial "self-liquidating" transactions[253].

Types of bills	BHAM	BVIZ	BUMA	BECR	BCEN	BERP	BMER
1929							
Commercial	6.00%	6.00%	6.00%		6.00%	6.00%	
Financial	7.00%	6.50%	7.00%		6.50%	7.00%	
1930							
Commercial	6.50%	6.50%	6.0% - 6.5%		6.50%	6.0% - 6.5%	
Financial	7.00%	7.00%	7.00%		7.00%	7.00%	
1931							
Commercial	7.00%	6.5% - 7.0%	7.50%	6.5% - 7.0%	6.50%	6.50%	6.50%
Financial	7.00%	7.00%	7.50%	7.00%	7.00%	7.00%	7.00%

Table 4.7: Discount rates charged by main banks in Spain in Madrid (1929-1931)

Source: *Memorias de la Sucursal del Banco de Bilbao en Madrid* years 1929 to 1931.

Banks would charge different rates to different types of bills, but the majority of the operations were done with 3-month commercial bills of exchange. Some banks, for example, would charge higher rates to financial or accommodation bills or to bills without the required signatures. To harmonize the index, I weight the rates charged per type of bill (when available) by the amounts discounted at

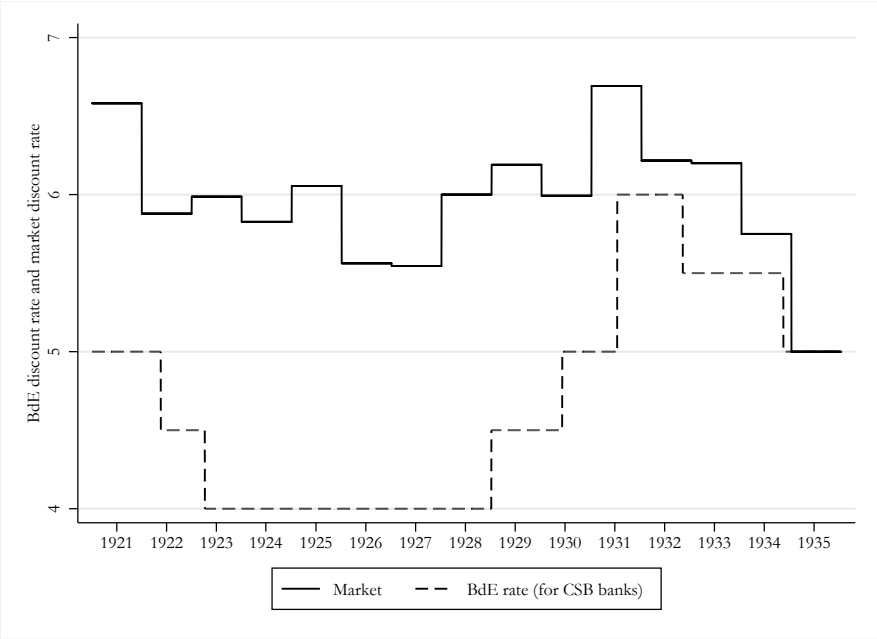


Figure 4.18: Market and BdE discount rate for 3-month bills of exchange (1921-1935)

Source: see text.

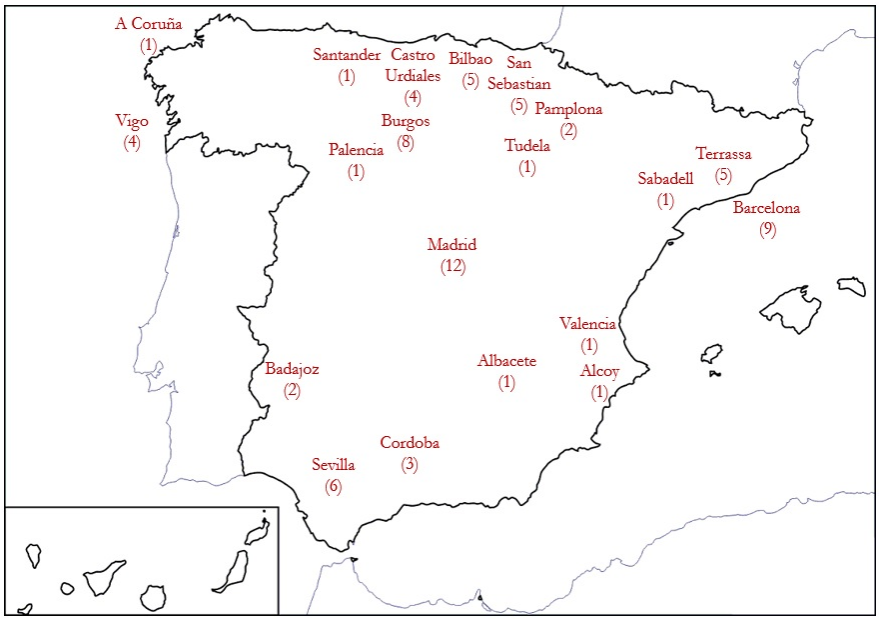


Figure 4.19: Geographical representativeness of the index (1919-1935)

Source: see text.

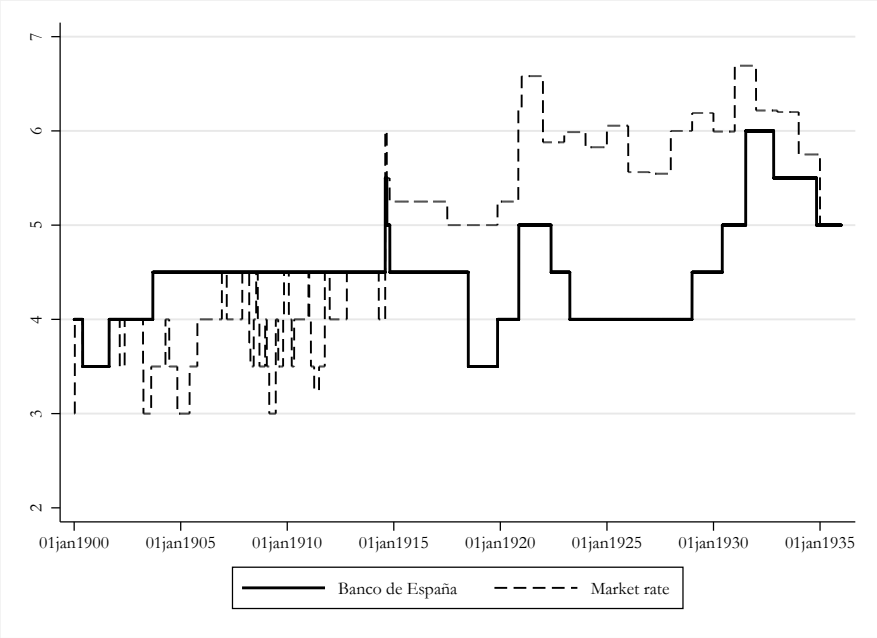


Figure 4.20: Official and market rates, Spain (1900-1936)

Source: see text.

those rates[254]. The resulting index is presented in Figure 4.18. Usually, the rate that emerges from this calculation is virtually the same that banks charged to 3-month bills. In the cases in which banks did not report different operations I take the single rates reported, assuming that most of the operations were done at this rate. Geographically, the index is build up with data from different areas of Spain. Although the most abundant data is from Madrid and Barcelona, there are other cities and towns for which data is available. The map depicted in Figure 4.19 shows the cities and the number of years of the 14-year period (1921-1935) for which is data available (number of years available in parenthesis). Finally, the three periods are added together in Figure 4.20. As said in the beginning of this Appendix, the continuous line of the "market rate" needs to be interpreted carefully, because the collateral involved in the operations is not the same. However, for the sake of interpretation, and to highlight the changing nature of the interest rate structure, a look at the connected series from 1900 to 1936 is informative.

Explaining bank stability in Spain during the 1930s

5.1 Introduction

Banking failures during the 1930s are one of the most spectacular features of the Great Depression. In particular, the United States stands out with around 10,000 of the 24,000 institutions that were in operation at the beginning of 1929 failing between the beginning of that year and March 1933 (Richardson, 2007). The role of bank failures in transmitting the monetary shocks of the Depression was highlighted by Bernanke (1983), as the main channel of transmission of the monetary contraction that took place in the early 1930s (Friedman and Schwartz, 1963). Although bank failures in Europe were less prevalent than in the United States, a series of important banking closures have been associated with strong and negative real effects. Following the disclosure of large losses by the Austrian Credit-Anstalt in May 1931, the crisis extended rapidly to neighboring Germany. The German Darmstäder- und Nationalbank (Danatbank) failed in mid July, causing a contagion of panic to all German financial institutions, and forcing them to a temporary closure (James, 1984; Bernanke and James, 1991; Schnabel, 2004a). Contagion from the Central European panic ended up causing a sharp liquidity shock to banks in London, to which the Bank of England reacted by expanding its balance sheet through open market operations, and ultimately pushing Britain out of the Gold Standard in September (Accominotti, 2012).

While certainly instrumental in the transmission and worsening of the Great Depression, a narrative that focuses only on bank failures as the main metric for understanding the severity and length of economic contraction during the 1930s, risks neglecting important nuances that are necessary to understand the differential impact of financial shocks during the Depression in different countries. This is important in the light of more recent developments in banking crises, where

bank failures have become extremely rare events, but where sharp and permanent contractions in bank lending have not necessarily been avoided. Perhaps the most salient example of this is the case of the so-called "zombie banks" in Japan during the 1990s (Krugman, 1998; Ito and Kashyap, 2000; Caballero, Hoshi, and Kashyap, 2008), but there are more recent examples from the Great Recession (Hoshi and Kashyap, 2010).

As stressed above, bank failures were less prevalent in Europe during the 1930s, but the economic contraction was very severe. Therefore, bank failures don't tell the full story. The case of Spain during the Great Depression is an interesting illustration of the risk of using bank failures as the only metric for banking crises. Despite limitations to the lender of last resort intervention presented in Chapters 3 and 4, Spain saw very little and relatively small bank failures in 1931. Only four small and non-systemic banks–representing less than 3% of the system's total assets–closed their doors during that year. This chapter explores an alternative explanation for bank stability during the 1930s in Spain. I argue that the intervention of the Banco de España (BdE) as lender of last resort can not explain bank stability in Spain on its own. In Chapter 4 I showed that data on borrowing from the BdE at the bank-level reveals that emergency liquidity, while necessary to have avoided a deeper crisis, was not allocated proportionately and that given banks' liquidity shortages and currency mismatches, other factors must have played a role in keeping banks afloat. In particular, I argue that the suspension of mark-to-market accounting during the crisis was a crucial and necessary factor to ensure bank stability by protecting the asset-side of bank balance sheets. This kept bank losses to a minimum in a context in which the price of publicly traded securities fell dramatically. I also provide two additional factors that contributed to bank stability. First, savings banks, which held the deposits of the popular classes were unaffected by the crisis, as their depositors (pensioners, working classes and professionals) did not react to the political regime change that took place in April 1931 by withdrawing their deposits. Second, another decisive factor that prevented a widespread panic was policymakers' complete silence about the true depth of the crisis. This crucially limited information available to depositors. To the best of my knowledge, the actual depth of the crisis has not been documented until this day. Documenting this provides new important evidence to understand political instability in Spain during the 1930s, which is in turn a crucial element to understand the causes of the Spanish Civil War.

The rest of the paper is organized as follows. Section II documents the four cases of bank failures during 1931. Section III discusses the negotiation and the effects of the suspension of mark-to-market accounting during the crisis. Section IV compares the reaction of depositors in banks and savings banks. Section V deals with the role of information disclosure and Section VI concludes.

5.2 Who failed and why?

Not all banks survived 1931. Four banks failed in July: on the 3rd, Bauer & Cia (BAYC), the Rothschilds' correspondent in Spain suspended payments, becoming the only bank that failed in Madrid. Four days after, on July 7th, three more banks failed in different cities of Catalonia. These were the Banco de Cataluña (BCAT), the Banco de Tortosa (BTOR) and the Banco de Reus (BRDP); while the first suspended payments and never reopened its doors, the other two recapitalized and started operating again in 1932. The historical account of these bank failures is far from satisfactory. The failure of Bauer y Cia has been documented by López Morell and Molina Abril (2012) and López Morell (2013), which gathered reports from the archives of the Paris Rothschild House, but the evolution of the balance sheet of this bank before the 1931 crisis has not been included in the analysis. This section sheds more light into the failure of Bauer y Cia by combining data on their balance sheet with data on their daily borrowing from the BdE. The historical account of the failure of the three other banks is more problematic. Previous research from Martín-Aceña (1984), Tortella and Palafox (1984) and Cabana (2003) has not established the causes of these failures conclusively, especially for the case of Banco de Cataluña. This section provides additional evidence but, with the data at hand, it is still not possible to produce a final conclusion on what did ultimately bring the bank down.

Overall, bank failures were relatively small (Table 5.1). That said, the failure of the Banco de Cataluña seems to have had regional implications (Cabana, 2003). In terms of the market share of the bank in Catalan provinces, however, this depends on the estimates used. Table 5.2 shows the market shares I presented in Table 5.1 but as a percentage of banks with headquarters in the four provinces of Catalonia. Because the data on balance sheets I use does not provide systematic disaggregation at the branch level, it is difficult to establish a precise market share for this bank in Catalonia, because I don't have system-

atic data on banks headquartered elsewhere in Spain but that had a branch in Catalan provinces. However, drawing from bank-specific data collected at the largest banks' archives, I can produce some alternative estimates that are closer to the bank's actual market share in the region. I start from a calculation of the market share that does not take into account the branches that large banks based in Madrid had in Catalonia (Estimate 1). Then, I recalculate the market share including an estimate of the size of the branches that Banco Hispano Americano (BHAM) and Banco de Bilbao (BBIL) had in Catalan provinces (Estimate 2). Because these are lower bound estimates, I then I assume the other top banks, Banco Español de Credito (BECR), Banco de Vizcaya (BVIZ) and Banco Central (BCEN) held a similar share of their business in Catalonia (Estimate 3). Finally, I subtract the estimated share of the deposits that the Government held with BCAT, which were especially deposited by the former in this bank and cannot be computed as retail deposits. A safe estimate of the share of the Government's deposits in the bank can be placed at around 50% (see Section 5.2.2). Therefore, from an initial deposit market share of 24%, the final estimate suggests that the share of deposits of the three failed banks in Catalonia was around 12%. This is still a sizable share[255]. However, considering that there are a number of banks that held deposits in Catalonia (Spanish and foreign) that are not included in these adjustments and that I use a lower bound measure in all different estimates, the actual figure could be well below my final estimate. Overall, Table 5.2 constitutes a substantial downward revision of the relative importance of these banks.

	% of total assets	% of total loans	% of total deposits
Bauer y Cia	0.14%	0.36%	0.17%
Banco de Cataluña	1.87%	2.44%	1.60%
Banco de Tortosa	0.12%	0.05%	0.15%
Banco de Reus	0.40%	0.57%	0.47%
Total failed banks	2.53%	3.42%	2.39%

Table 5.1: Failed banks compared to Spanish banking sector

Note: all figures are from 1931q1. Source: *Boletines del Consejo Superior Bancario.*

In sum, failed banks represented a very small share of total Spanish banking sector assets, deposits and loans. That said, the final estimate of 11.8% still represents a shock to the banking sector in Catalonia, which needs to be added to

	Estimate 1	Estimate 2	Estimate 3	Estimate 4
Banco de Cataluña	17.31%	15.00%	13.40%	6.70%
Banco de Tortosa	1.66%	1.44%	1.28%	1.28%
Banco de Reus	5.12%	4.45%	3.90%	3.90%
Total share in Catalonia	24.09%	20.89%	18.58%	11.88%

Table 5.2: Estimated failed banks' market share in Catalonia (deposits)
Source: *Boletines del Consejo Superior Bancario.*

the shock suffered by Spanish banks branched in Catalan provinces that suffered severe liquidity pressure during 1931 (see Chapter 3). The next subsections discuss the failure of banks in two parts. First I deal with the failure of Bauer y Cia and second I address the failure of the three aforementioned banks in Catalonia.

5.2.1 Bauer y Cia: misusing the *right* connections

After almost a century of history, the representative of the Rothschilds in Spain, Bauer y Cia suspended payments on July 3rd, 1931.[256] After a relatively stagnant period in the first half of the 1920s, the bank started an unsustainable expansion plan from 1928, relying heavily on liquidity provided by the BdE. Along with the strong expansion of the Spanish economy and the banking sector, the bank expanded its business well beyond commercial banking.

The main example of this was the creation of *Compañia Iberoamericana de Publicaciones* (CIAP) in 1924. The Society was born as the first large publishing firm in Spanish. During its seven years of existence, the Society became the main player in the publishing business in Spain, holding the publishing rights of some of the main Spanish writers of the time.[257] Right from its inception, the participation of the bank in the Society grew to account for the largest share of the bank's assets. Bauer y Cia became an extension of the CIAP, which expanded very fast during its first years (López Morell and Molina Abril, 2012). This can be seen in Table 5.3, which shows a reconstruction of the balance sheet of Bauer y Cia at the time of liquidation, in July 1931. By then, the bank's participation in CIAP accounted for half of its total assets, highlighting the bank's strong reliance on the publishing company's future, while having a poorly diversified

portfolio. The other half was made up of highly illiquid securities, as it included assets for which there was not a ready market or items such as jewels, paintings and tapestries. Current accounts in other institutions, the bank's only liquid asset left by the time of liquidation, amounted to a tiny 7% of total assets. The composition of the bank's asset side of the balance sheet became increasingly problematic as the expansion of CIAP turned out to be based on unsustainable grounds. While CIAP was still regarded by its clients as a solvent firm by 1930, it started accumulating losses due to the mismanagement of both Ignacio and Alfredo Bauer, who failed to meet the managerial requirements of such a rapid expansion. After having purchased some of the main bookshops in a number of Spanish cities, the firm failed to deliver book orders, accumulated unsold stocks and ultimately undermined the reputation of long established book retailers it had just acquired (López Morell and Molina Abril, 2012). Moreover, the Bauer brothers inflated the book value of some of the bank's real estate assets[258].

The structure of the bank's liabilities was not less problematic. As can be seen in Table 5.3, the bank relied very heavily on credit from the BdE. Instead of supporting the expansion of the firm by increasing capital, attracting depositors or issuing long term obligations, the Bauer brothers funded all purchases done by CIAP by issuing short term bills of exchange, that their own bank would accept (thus becoming, ultimately, its liability). The Bauer brothers would discount these bills at their own bank, and then rediscount them with the BdE. As López Morell (2013) put it, the BdE had granted the bankers "virtually unlimited credit".[259] When the CIAP started reporting severe losses from 1930, the bank increased its reliance on the BdE to rediscount newly issued bills that sustained the liquidity needs of the company. By the time of liquidation, more than one third of the bank's liabilities were short term bills that had to be serviced to the BdE, with bills issued by CIAP accounting for more than half. The bank did not rely only on rediscounting these bills, it also made extensive use of other credit facilities at the discount window of the BdE. The bank borrowed heavily against Gold bonds, as these were particularly liquid given that the Lombard rate set for this type of bonds was 200 basis points below their yield (see Chapter 2). It also used public debt and other securities to obtain advances from the BdE.[260] The bank was also dependent on advances from other banks, and in some cases it used securities that were property of the Rothschild House or of its own clients as collateral for these operations. In addition, and as a last attempt to revive the CIAP, Alfredo Bauer had managed to obtain a 5 million pesetas personal credit from the

Assets		Liabilities	
Real estate	2731126	Bills discounted with the BdE	
CIAP	14000000	from CIAP	6470909
Cia. Agricola e Industrial de la Guinea Española	1700000	from Bauer y Cia	1000000
Jewels, paintings, tapestries, etc.	4000000	from others	3154830
Current accounts in other banks or institutions	2000000		
		Advances with the BdE	
		against Gold Bonds	3150000
		against public debt	349500
		against other securities	2715500
		Advances with Banco de Bilbao	4830000
		Loan from the BdE	2000000
		Personal loan from Rothschild to A.Bauer	5000000
		Other maturing debts	1234500
Total estimated assets	24431126	Total estimated liabilities	29905239

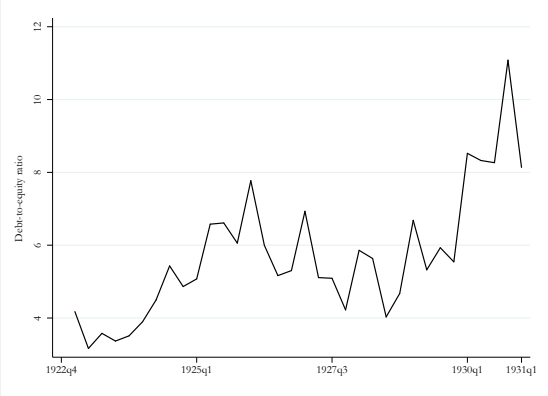
Table 5.3: Balance sheet of Bauer y Cia before declaring insolvency in July 1931
Note: figures in the balance sheet are the estimates of P. Jardot, the delegate of the Rothschild House that was sent to evaluate the situation of Bauer y Cia. The date of the balance sheet is 30 June 1931. Source: combination of data from Table 10 in López Morell and Molina Abril (2012, p.135).

Rothschild House in Paris, which was also about to mature in the summer of 1931.

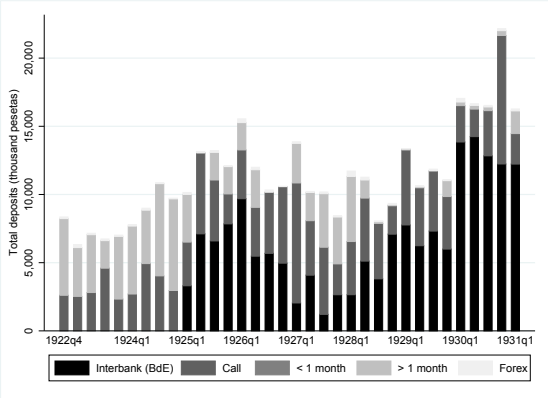
Quarterly data from the bank's balance sheet and its daily borrowing from the discount window of the BdE confirm this picture. Figure 5.1a shows the bank's debt-to-equity ratio. Figure 5.1b shows the composition of the bank's liabilities between 1922 and its failure in 1931. Black bars show borrowing from other financial institutions, including borrowing from the discount window of the BdE. As both figures show, the bank started relying heavily on borrowing from the BdE in order to expand its portfolio, roughly doubling its debt-to-equity ratio in less than two years. In fact, quarter after quarter, the bank kept losing long term retail deposits (light grey bars in Figure 5.1b), which were replaced by short term borrowing from the BdE (black bars in Figure 5.1b). At this level of aggregation, it is difficult to interpret the change in the composition of liabilities between 1924q4 and 1925q1. There is no evidence that the bank suffered a run on its retail deposits back then. Also, its short term deposits remained stable and it was only its time deposits that contracted. Instead, what motivated this change in the liability structure of the bank was indeed the foundation of the CIAP, which was registered in January 1925 (López Morell and Molina Abril, 2012). What is clear is that following the foundation of the CIAP, the bank experienced a sharp shortening in the average maturity of its liabilities. It is also evident from Figure 5.1b that as the CIAP's business started deteriorating, from early 1930, Bauer

y Cia doubled their reliance on the BdE. From an average of roughly 5 million pesetas between 1925 and 1929 (around 45% of its liabilities), borrowing from the BdE surged to account for 90%. By 1930, both Bauer y Cia and the CIAP could not survive without continued access to the discount window of the BdE.

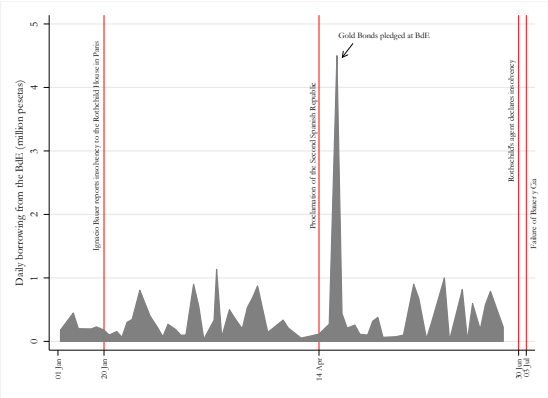
In turn, Figure 5.1c shows the bank's daily borrowing from the BdE discount window in Madrid between January and July 1931. By 20 January, Alfredo Bauer, one of the two Bauer brothers, had reported insolvency to the House of Rothschild in Paris, who sent a representative to conduct and inspection, produce a realistic balance sheet (see Table 5.3) and to find out the possibilities of the bank remaining afloat. In the meantime, despite its insolvency, the bank continued to borrow from the BdE to remain afloat[261]. When CIAP started reporting severe losses, the bank started relying almost entirely on the BdE to roll over its short term liabilities. It is therefore interesting to see that on 20 April 1931, two months after having declared themselves insolvent to the House of Rothschild in Paris, Bauer y Cia pledged their entire portfolio of gold bonds at the BdE, amounting a total of 4.5 million pesetas, or 23% of their total assets (Figure 5.1c). By March 1931, Bauer y Cia's total callable deposits amounted to 2.2 million pesetas (Figure 5.1b), so even if Bauer would have also suffered a run on deposits during the first days of the Republic, the amounts it borrowed before publicly declaring insolvency were certainly motivated by its ongoing liquidity and solvency problems. This situation lasted until July 1931, when the bank made its insolvency public and closed its doors. Only then the Banco de España stopped lending to the bank. It is striking how the BdE continued to lend to Bauer y Cia without effective limits, and according to López Morell (2013) against financial–not real–bills issued by a company owned by the bank (CIAP). This is even more the case by looking at the evolution of debt-to-equity ratios for this bank. Despite its strong claims against lending to insolvent (unhealthy) institutions, it seems that "social capital" (the Rothschilds' name) counted more than any fundamental measure of a sustainable balance sheet. As a consequence of both circumstances, the BdE ended up making losses on its lending to Bauer y Cia, and it held a long court case with the Rothschild House in Paris in order to seize assets to compensate the losses[262].



(a) Debt-to-equity ratio (1925-1931)



(b) Deposits, by type (1925-1931)



(c) Borrowing from BdE, 1931 (daily)

Figure 5.1: Bauer y Cia, debt-to-equity ratio, liability structure and borrowing from the BdE

Source: *Boletines del Consejo Superior Bancario* and *Actas de la Comision de Operaciones del Banco de España.*

5.2.2 Catalan banks and their *wrong* connections

The debate over the ultimate causes of the failure of Catalan banks in 1931 has not been settled yet. However, there seems to be an agreement on the proximate cause of their failure. In particular, the failure of Banco de Cataluña seems to have roots in its political connections. In short, in July 1931, the Republican Government withdrew the funds from the oil monopolies that the Dictatorship had previously entitled the bank with. From 1925, Banco de Cataluña had cooperated extensively with the Minister of Finance of the Primo de Rivera Dictatorship, Mr. José Calvo Sotelo. Two of the main joint projects that the bank helped launch were CAMPSA and CEPSA, both firms related to the refinery and production of oil[263]. Importantly, CEPSA was created at the initiative of the Recasens brothers[264], which had founded the Banco de Cataluña in August 1920 and earned the trust and sympathy of Mr. Calvo Sotelo (Lluch, 1968b; Cabana, 2003). As a result of these political connections, the bank ended up holding the deposits of the oil monopoly (CAMPSA) and thus was entitled with a significant rent. As time passed, however, even Calvo Sotelo had been disappointed with the companies' investment projects[265]. However, BCAT continued to hold CAMPSA's deposits until 1931.

The depreciation of the peseta also played a key role in fueling the banks' exposure to swings in the political stance towards its owners. From 1928, the exchange rate had been reaching historically low levels and this became the main preoccupation of the Dictatorship. One of the alleged culprits of "foreign speculation against the peseta", which was the main explanation provided by the government for the depreciation, was the fact that large foreign oil firms held pesetas and were dumping them on foreign exchange markets, depressing the exchange rate and frustrating all attempts by the Government to stabilize the currency. In fact, foreign oil companies like Shell and Standard Oil had offered the Dictatorship large sums in Sterling that could be used to nationalize all outstanding debt denominated in foreign exchange that Spanish banks had accumulated during 1930 (see Chapter 3). For this to happen, the Government had to agree to either dismantle the monopoly (CAMPSA) and liberalize entry to the market or to pay foreign companies with CAMPSA shares. For example, on 12 August 1930, *The Times* reported that Standard Oil was willing to grant the Spanish government with one thousand million gold-pesetas in order to dismantle the monopoly[266]. This was around three times the amount of foreign exchange liabilities in the banking system. However, both the Dictatorship and later the Republic rejected

such agreements. Interestingly, a letter sent from the De Rothschild Freres to Bauer y Cia reveals first hand information from the House in Paris about the issue[267]:

> *"(...) Shell and Standard Oil would buy shares of the Monopoly of Petroleum if the Government was interested (...) they would pay in Sterling (...) of one thing you can rest assured, and that is that neither of the two companies have had any hand in the fall of the peseta at the present time, nor have taken any steps in either buying or selling pesetas to make any effect on the exchange market."*

However, that was far from the official discourse. Policymakers both from the Dictatorship and the Republic were concerned that Shell and Standard Oil were behind the drop of the peseta and that in no way the monopoly could be *sold* to them. Both CAMPSA and CEPSA were regarded by the provisional Minister of Finance of the Republic, Mr. Indalecio Prieto, as strong opportunities to *socialize* the Spanish economy. Aiming at having a closer control over their funds, right after the Republic was proclaimed in 1931, Prieto ordered the withdrawal of all the deposits that CAMPSA had in the bank. In addition, the Municipality of Barcelona, to which the bank had lent in the previous years, suspended payments on July 1st. Along with these news, depositors also run on the bank, which had to close its doors on July 7th.

According to Cabana (2003), Prieto withdrew the funds because of the bank's previous strong relations with the Dictatorship. In his account, Cabana described that Mr. Prieto was influenced by his close relations with Basque bankers and industrialists and transferred the deposits of the oil monopolies to them after withdrawing them from Banco de Cataluña[268]. The evidence I present here suggests that Mr. Prieto's perception that the bank had expanded mostly thanks to its connection with the Dictatorship was accurate. However, more importantly, and from a bank management standpoint, this expansion already signals high exposure to a single lender, which suggests that the bank had not diversified its portfolio and relied almost entirely on the oil funds to expand. In fact, Lluch (1968b) already pointed to the fact that the bank had relied too much on the Government (the oil monopolies) to expand, rather than creating a solid base of retail depositors on which the bank could rely. Figure 5.2 confirms this; the chart shows the debt-to-equity ratio of the bank. The bank accelerated its expansion right after the creation of CAMPSA in 1927 and, after recapitalizing in 1929 in

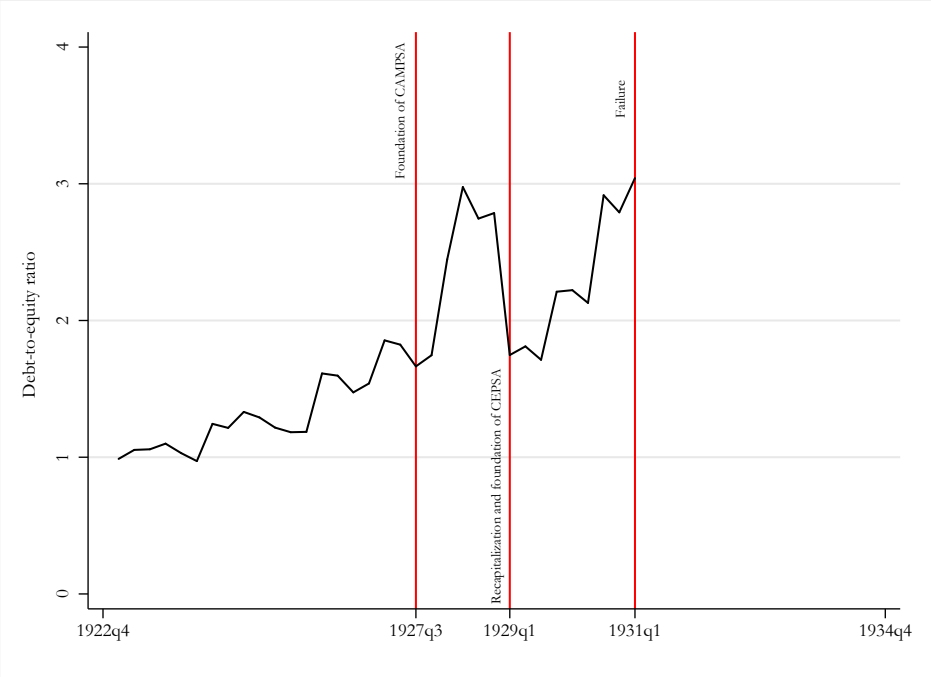
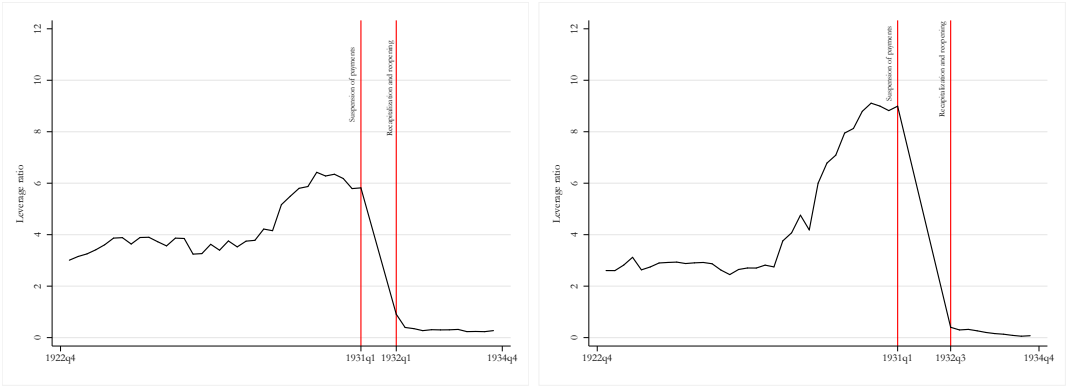


Figure 5.2: Banco de Cataluña, debt-to-equity ratio (1922-1931)
Source: *Boletines del Consejo Superior Bancario*.

order to participate in CEPSA, it continued with its fast expansion. As with Bauer y Cia, which relied almost entirely on CIAP, Banco de Cataluña seems to have relied excessively on the funds deposited by the oil monopolies. Albeit the two cases are different in that they represent different political or economic ties as well as different proximate cases of failure, in both cases, mismanagement in the form of poor diversification stands out as a common and obvious ultimate cause for failure. Until 1931, Banco de Cataluña relied heavily on a rent provided by its close connections with the Dictatorship. As soon as the political equilibrium changed, the bank lost its rent.

Along with Banco de Cataluña, two other, smaller banks suspended payments in Catalonia: the Banco de Tortosa (BTOR) and the Banco de Reus (BRDP). Both banks had close connections with Banco de Cataluña and were controlled by the same owners. However, they did not hold deposits directly entitled by the Government and, therefore, were not affected by the withdrawal of Government funds. However, these two banks suffered deposit withdrawals as the public feared that, being connected to BCAT, they would be the next in line to fail (Cabana, 2003). With available data at hand, it is impossible to quantify how much these banks were affected by unpaid liabilities from the failure of BCAT, to which they were connected. That said, it seems difficult to conclude that, when



(a) Banco de Tortosa (BTOR) (b) Banco de Reus (BRDP)

Figure 5.3: Leverage ratios of banks connected to Banco de Cataluña
Source: *Boletines del Consejo Superior Bancario*

they failed in July 1931, they did so only because a run on their deposits. This would fail to explain why they had to be recapitalized a year after and started operating again in 1932. Instead, it seems to be the case that they were brought down by the failure of BCAT and only after recapitalizing, they could reopen. Figure 5.3 shows the evolution of debt-to-equity ratios for both banks. Compared to BCAT, these two little banks were substantially more leveraged (particularly BRDP) and also expanded rapidly before the crisis. In both cases, however, after recapitalizing, they remained almost inactive until 1935.

What was the role of the BdE in providing assistance to the four banks that failed in 1931? As the case of Bauer already shows, the BdE did not step in to keep the bank afloat after mismanagement problems became obvious and the bank ran out of collateral. This bank constitutes a clear case of insolvency that was not caused by any of the shocks common to all the rest of banks. Although the case of Banco de Cataluña shows a more direct link with the change in the political regime that took place in April 1931, from the point of view of bank management it is not very different from Bauer y Cia. In contrast with my analysis, Cabana (2003) concluded that the BdE could have kept BCAT afloat and that did not do so because of a political bias against Catalan banks, an argument that was also made regarding the failure of the Banc de Barcelona in 1920[269]. The Republican Government *targeted* the bank, and as a consequence, it failed[270]. One could add, however, that the bank was not *targeted* by the Republican Government; by being provided with a rent, it had already been *targeted* by the Dictatorship.

Cabana reached his conclusion after showing that, when the Council of Barcelona

missed a coupon payment to BCAT on 1 July, the BdE refused to provide the Council with liquidity unless all banks in Barcelona provided a syndicated guarantee. In the end, a group of banks and savings banks provided the needed liquidity and the Council paid the coupon with a two week delay. He concluded that *"(...) the failure would have been avoided if the Banco de España had shown a bit of generosity, instead of rigid and formalist criteria. (...) the bank failed because of a liquidity crisis closely linked to the animosity of the Minister of Finance and the anger of the large Spanish banks against the bank"*[271]. Again, it is worth adding that by July 1931, the BdE had already exposed itself to substantial credit risk by rediscounting bills of exchange during April, May and June and to also not minor counterparty risk, as it had lent extensively against public debt to a number of different banks. Therefore, it seems difficult to argue that the BdE was in a position to lend against the type of collateral that BCAT had been accumulating. As Figure 5.5, on the way to the 1931 crisis, BCAT had become much less liquid, as it had reduced its holdings of public debt substantially. Perhaps more crucially, Cabana's account is also difficult to reconcile with the account provided by Lluch (1968b), who explained how the Minister of Finance, Mr. Indalecio Prieto aimed at organizing a last minute lifeboat for the bank, but that was rejected by the Recasens brothers who, apart from the rent from the oil monopolies, seem to have been not very interested in the future of the bank[272].

Looking at the bank's borrowing from the discount window of the BdE, it is hard to argue that the latter had a bias against the former. As Figure 5.4 shows, BCAT borrowed from the BdE during the crisis, until July, when it failed. We don't know if the bank lost substantial deposits before July, as the last balance sheet it reported was from the end of March. Therefore, it is hard to assess if the bank had met its liquidity needs by borrowing from the BdE before it lost the CAMPSA funds. Interestingly, however, the bank borrowed more before the Republic was procclaimed than after that, which suggests that the bank might either had liquidity problems before the crisis or that it did not experience substantial deposit losses during April, May and June, before the CAMPSA funds were withdrawn.

A look at the evolution of the balance sheet, however, can shed some additional light. First, Figure 5.5a shows that the increase in the bank's deposits came right after the creation of CAMPSA and these were all short term deposits, which increased by a factor of four in three years. Therefore, the bank was in a

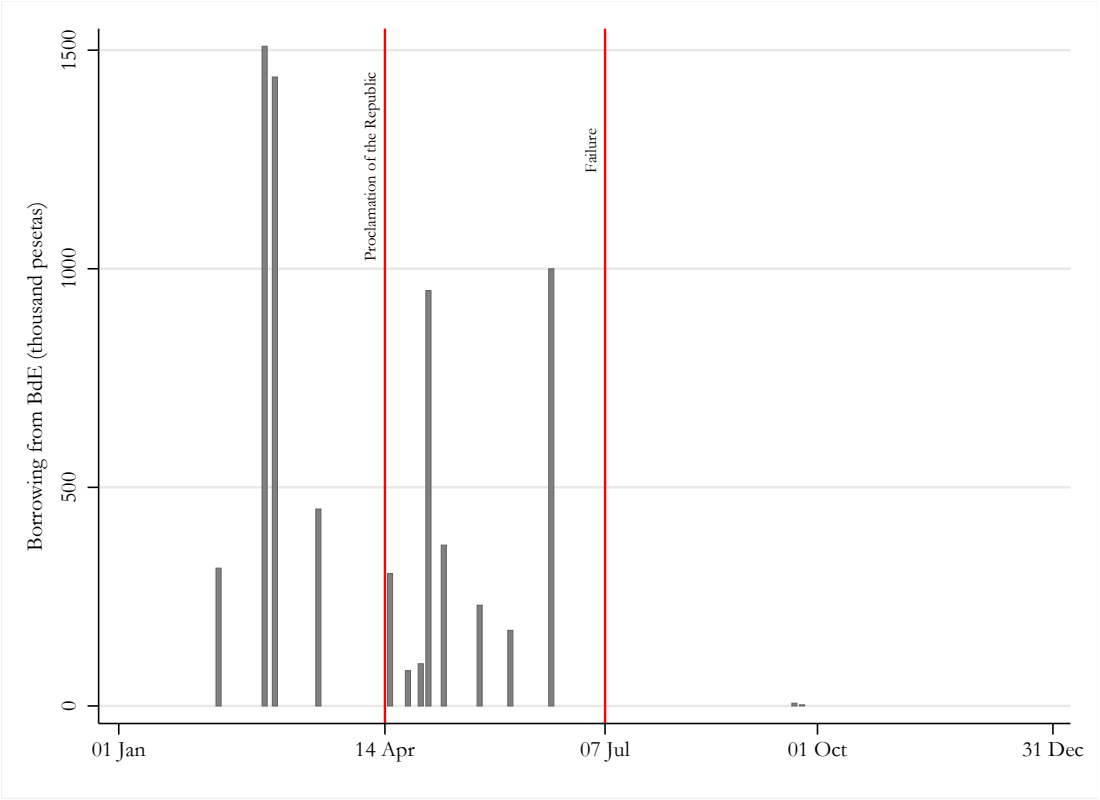
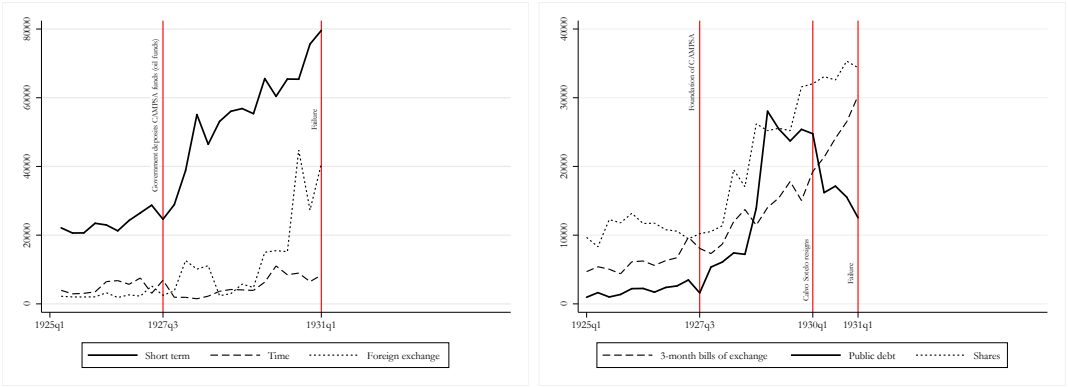


Figure 5.4: Banco de Cataluña, borrowing from BdE

Source: *Actas de la Comision de Operaciones del Banco de España.*



(a) Deposits (b) Portfolio

Figure 5.5: Evolution of BCAT portfolio and CAMPSA liabilities

Source: *Boletines del Consejo Superior Bancario*

relatively fragile position was it to receive a sharp deposit withdrawal. However, until the day of its failure, BCAT continued to receive deposits. Looking at assets, Figure 5.5b shows the evolution of the bank's holdings of public debt compared to other securities. As opposed to virtually all banks in Spain, who were increasing their shares of public debt as a means of ensuring their liquidity (see Chapter 2), BCAT started liquidating its portfolio of public debt from early 1930, right after Dictator Primo de Rivera and its Minister of Finance Mr. Calvo Sotelo resigned in January. By March 1931, BCAT had sold half of its government bonds. Where did the bank place the funds from selling half of its public debt portfolio? Figure 5.5b shows how the bank switched its business towards the rediscount of bills of exchange and the purchase of privately issued stocks, a somewhat similar strategy to what Bauer y Cia had pursued. Loans, on the contrary, remained relatively flat. This is important if we recall that the bank was funded mostly by short-term deposits owned by the Government and was supposed to invest them in oil-related activities (see quote above). Instead, as soon as the bank's main political support–Mr. Calvo Sotelo–lost power in January 1930, it seems that BCAT opted for changing its business towards private securities and stopped accumulating public debt, a strategy that contrasts sharply with all other banks.

In sum, it is hard to argue that any of the four banks that failed in Spain during the 1931 crisis did so because of a deterioration in their assets associated with the international financial crisis or with the regime change. At least, not more than the rest of the banking system. One of them, Bauer y Cia, failed because of clear mismanagement and ineptitude of its managers; by relying on the Rothschild's name, the bank became an instrument to fund a publishing company that went bankrupt. The other three banks suspended payments because they lost the preferencial treatment that the previous regime had granted them with. Banco de Cataluña benefited directly, and Banco de Reus and Banco de Tortosa benefited because they were subsidiaries of Banco de Cataluña. The latter lost its rent as the Republic was proclaimed. Just as it had earned the rent thanks to its founders' close ties with the Dictatorship, the Republic transferred the rent elsewhere. A better banking environment might have made it easier for the banks to survive, but it is fair to conclude that, had the regime change taken place without any pressure in the exchange rate or a widespread bank run, it is very likely that all these banks would have failed or suspended payments anyway. In any case, Spain only experienced four small bank failures during the 1931 banking crisis. The next sections explain why, apart from these four cases, Spain retained bank

stability despite the severe shocks the system underwent.

5.3 The suspension of mark-to-market accounting

Among the many parallels that have been recently drawn between the Great Depression of the 1930s and the more recent Great Recession is the role of asset valuation. Long forgotten, this debate was reignited during 2009, as banking assets entered a violent devaluation spiral as liquidity dried in financial markets (Brunnermeier, 2009; Gorton, 2010). The debate about asset valuation can be summarized in two different stances. On the one hand, mark-to-market accounting, a type of so-called "fair value" accounting by which asset valuation in firms and banks' balance sheets are updated periodically (usually on a quarterly basis) to reflect the price that they would carry if they were to be sold in the open market. The opposite methodology, so-called "historical value" or amortized cost, keeps asset values in balance sheets constant at the price that was paid upon purchase of the asset (Lennard, 2018). The debate is inevitably fraught with subjective perceptions of *fairness* and the political economy inherent to accounting regulation.[273] For some, marking assets to market exposes the financial system to short term unfounded volatility, while for others the risk resides in ignoring market information as the most accurate signal on real asset value (Haldane, 2012; Ball and Haldane, 2018).

Marking to market improves information about the risk profile of firms in a way that market participants can exercise market discipline and monitor the decisions taken by a given firm. The main shortcoming of marking assets to market is that while it avoids distortions caused by inefficient decisions taken by firms based on historical *outdated* values, it can create new distortions. In short, since markets are only imperfectly liquid (especially during financial crises), if assets are marked to market, the value of a given bank's asset does depend on other banks' selling decisions over the same asset (Cifuentes, Shin, and Ferrucci, 2005). Asset fire-sales, like the ones experienced during the Great Depression or the Great Recession can be triggered by the effect of contagion of depressed asset prices from one bank's balance sheet to another via marking to market (Schnabel and Shin, 2004; Plantin, Sapra, and Shin, 2008; Allen and Carletti, 2008).

This was already identified as a channel of transmission of monetary shocks during the Great Depression. In their monumental *A Monetary History of the United States, 1867-1970*, Milton Friedman and Anna Schwartz observed:[274]

> *"(...) the banking system as a whole was in a position to meet the demands of depositors for currency only by a multiple contraction of deposits, hence of assets. Under such circumstances, any runs on banks for whatever reason became to some extent self-justifying, whatever the quality of assets held by banks. Banks had to dump their assets on the market, which inevitably forced a decline in the market value of those assets ad hence of the remaining assets they held. The impairment in the market value of assets held by banks, particularly in their bond portfolios, was the most important source of impairment of capital leading to bank suspensions, rather than the default of specific loans or of specific bond issues."*

Friedman and Schwartz also hinted at the importance of marking to market and ex-ante asset liquidity for the contagion of fire-sales of bonds and securities:[275]

> *"Because there was an active market for bonds and continuous quotation of their prices, a bank's capital was more likely to be impaired, in the judgment of bank examiners, when it held bonds that were expected to be and were honored in full when due than when it held bonds for which there as no good market and few quotations. So long as the latter did not come due, they were likely to be carried on the books at face value (...). Paradoxically, therefore, assets regarded by the banks as particularly liquid and as providing them with a secondary reserve turned out to offer the most serious threat to their solvency."*

The quotes above provide two interesting benchmarks to which the Spanish case can be compared. First, the more obvious channel of transmission of asset depreciation from one bank to another as banks had to resort to fire-sell assets in a scramble for liquidity. Second, the role of stock market activity during the crisis. The fact that quotations for bonds and other securities remained active during the banking crises in the United States increased the potential for contagion via mark-to-market. The more active the market for a given security was, the stronger the impact on bank's portfolios, thus opening a way in which fair ac-

counting was perversely linked with worsening liquidity conditions for banks. As I will detail below, in both cases, the Spanish experience contrasts significantly with the scenario described by Friedman and Schwartz (1963), and explains the different outcomes in both countries' banking sectors during the 1930s, after having suffered similar shocks.

Recently, some researchers and commentators have highlighted the role of the suspension of mark-to-market accounting as key to the recovery from the Great Depression in the United States. A number of parallels have been drawn with the recent financial crisis (Laux, 2012). In some cases, commentators have gone as far as implying causation from fair value accounting to the Great Recession (Wesbury and Stein, 2009a,b). Fair value accounting also played a role during the Euro Crisis, as banks exposed to Greek debt (among other assets) were severely affected by mark-to-market losses, thus contributing to the so-called "doom loop" of mounting depreciating public debt in the banking sector (Shambaugh, 2013; Baldwin, Beck, Benassy-Quere, Blanchard, Corsetti, de Grauwe, den Haan, Giavazzi, Gros, Kalemi-Ozcan, Micossi, Papaioannou, Pesenti, Pissarides, Tabellini, and Weder di Mauro, 2015). While it is far from the scope of this chapter to discuss the direction of causality between fair value accounting and financial crises (both in the upswing and the downturn phases of the credit cycle), it is important to discuss the role played by mark-to-market during the 1930s in the United States; not only its role in reinforcing contagion, but also the role played by its suspension.

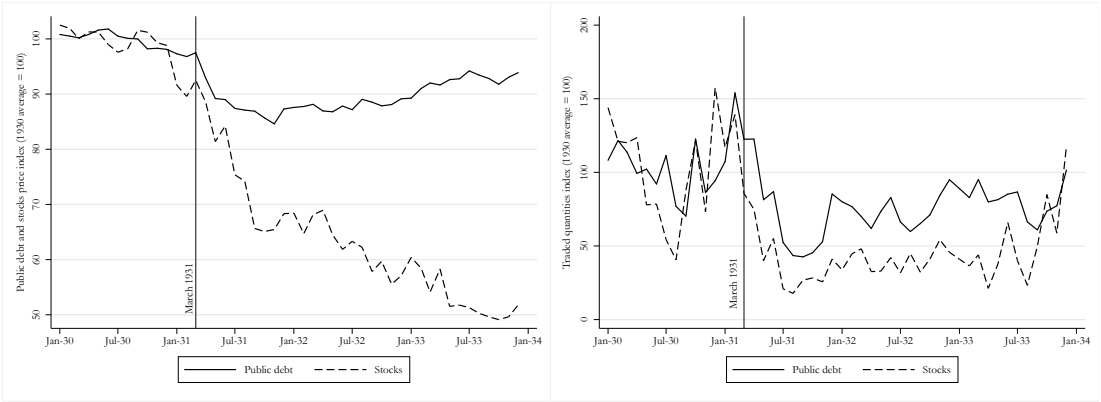
In April 1938, fears of a double dip recession prompted President Franklin Delano Roosevelt to organize a convention between the main representatives of the financial and monetary regulatory bodies[276]. The Comptroller of the Currency, the Federal Reserve Board, the US Treasury and the recently created Federal Deposit Insurance Corporation (FDIC) met to discuss asset valuation, in a heated meeting that Marriner S. Eccles, then Chairman of the Federal Reserve described as "guerrilla warfare" (Simonson and Hempel, 1993). Eccles description of the meeting is better understood by describing the different stances taken by the different actors involved. On the one hand, the Comptroller of the Currency and the FDIC argued that fair value accounting was necessary. On the other hand, the Fed argued that it should be suspended, as sticking to it implied *"(...) leading to a policy of curtailment and liquidation at exactly the wrong time"*.[277] Finally, the position held by the Fed prevailed. The outcome of the meeting was

included in the June 1938 Uniform Agreement on Bank Supervisory Procedures, which established that investment grade assets would be valued at amortized cost and sub-investment grade assets would be valued at long-term average of market prices. Mark-to-market accounting was effectively suspended in July 1938.

Seven years before the Roosevelt administration suspended mark-to-market valuation in the United States, a similar move was taken in Spain. As this section shall argue, this was a necessary move to avoid bank failures. Despite in essence the policy decision is the same (i.e. suspending fair value accounting), there are differences with the account provided above. First, in the Spanish case, it is clear that the initiative came from the banking system. All other actors involved (especially the Minister of Finance, who was not represented in the meetings) followed the lead of the consensus reached by the *Consejo Superior Bancario*, the bankers' association. Second, the decision was reached much faster than in the United States, and in time to avoid banks to realize otherwise unbearable losses. Third, the suspension of mark-to-market was barely commented in the press and did not go public. This, as I explain below responded to all parties' desire to prevent the actual extent of the crisis from reaching the public domain.

5.3.1 The discussion between banks, BdE and the Government

During the second half of the 1920s, stock markets rallied; with them, banks' portfolios of private stocks more than doubled (Figure 5.9). Some shocks notwithstanding, all stocks increased almost uninterruptedly until 1930, where they reached a plateau. However, right after the proclamation of the Republic, on April 1931, the stock market fell rapidly; the price of public debt fell 12.7% during the rest of the year, and private stocks collapsed by 31.6% (Figure 5.6a). During May, the Madrid, Barcelona and Bilbao stock markets were closed between the 11th and 17th, during the violent clashes between Republicans and Monarchists in the streets of different cities across Spain (Escribano Bote, 2015). The Minister of Finance, Indalecio Prieto, claimed that the stock market tended to overreact to all political developments, and that this was going to affect the stability of the new regime[278]. In fact, if allowed to have a real impact on banks' balance sheets, the shock would have certainly caused widespread bank failures. By March 1931, banks portfolios of securities held substantial amounts of stocks, bonds and public debt, all which fell sharply in value as soon as the Republic was



(a) Price indexes (b) Trading indexes

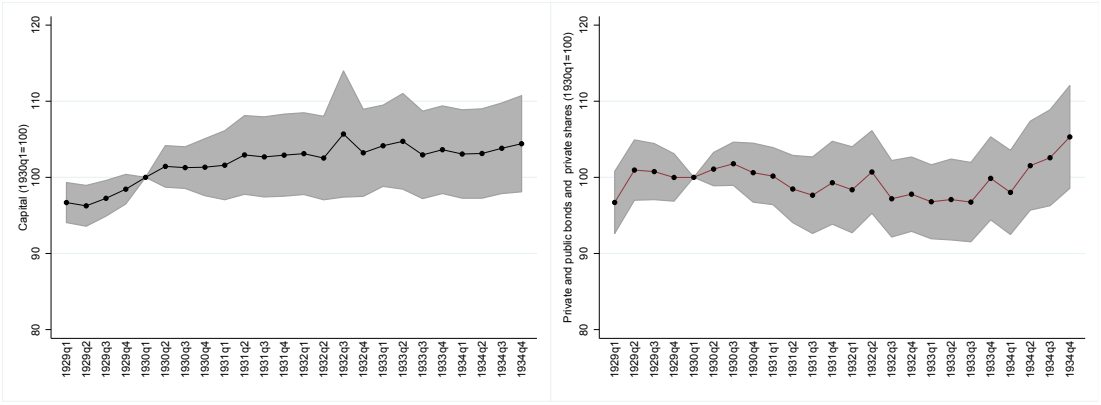
Figure 5.6: Indexes of the price of public debt and stocks

Source: *Indices de la Bolsa Española, Fondo Documental del Instituto Nacional de Estadistica (1930-1934)*.

proclaimed. Between 1922 and 1930, bank's holding of stocks had expanded by 145% (Figure 2.1). Had banks been forced to mark their assets down to reflect *market* prices, Spain would have probably undergone a second banking panic as soon as banks reported losses by the first quarter of 1932. However, this did not happen. The closure of the stock market avoided an initial round of asset fire-sales. Trading activity collapsed to recover only once a Government was formed in November (Figure 5.6b). As the end of the year approached, banks started an initiative to avoid the realization of stock market losses in their balance sheets, and started pushing for the suspension of mark-to-market.

The actual evolution of bank capital and securities' portfolios is provided in Figure 5.7. In Figure 5.7a I plot the average and the 95% confidence interval of an index of bank capital ratios (1930q1=100). Capital remained intact. Importantly, there were virtually no recapitalizations after or during the 1931 crisis, so what the figure shows is that banks did not reflect mark-to-market losses caused by the collapse in stock and bond prices shown in Figure 5.6a above. Given that capital was virtually flat during the 1930s, I then turn to measure the evolution of securities' portfolios against the evolution of capital. I plot an index of the evolution of the share of private and public bonds over capital, using 1930q1 as the reference year. Figure 5.7b shows that banks valuation of securities portfolio was completely disconnected from the market prices provided in Figure 5.6a.

How did the banking sector achieve this remarkable stability? In October 1931, the President Delegate of the Consejo Superior Bancario (CSB), Mr. Augusto Barcia, sent a letter to all member banks, asking for different proposals



(a) Capital (b) Securities (stocks and bonds)

Figure 5.7: Impact of the stock market shock on banks' capital and portfolios
Source: *Boletines del Consejo Superior Bancario* and *Boletines Diarios de la Bolsa de Madrid.*

to deal with the depreciation of shares, bonds and public debt. As the end of the year approached, banks had to face the realization of stock market losses. According to the Trade Law, balance sheets of companies (including financial intermediators) had to reflect[279]: *the exact relation of money, securities, loans, bills, other types of assets, commodities and other types of commercial paper, valued at their real value, all of them constituting the company's assets.* However, 1931 was not the first time that mark-to-market was suspended. In 1914, trade insurance companies had been allowed–through a Royal Decree that, being considered a temporary measure, was also not published in the *Gaceta de Madrid*–to suspend market valuations of their assets temporarily, until trade could resume after the war. In 1931, during the negotiation in the CSB, banks referred to this case as a precedent[280].

Among banks, and following the content of the Trade Law, it was custom to mark assets to market. Given the vagueness of the Trade Law in this respect–as it was not clear what "real value" stood for–mark to market became common practice. For example, discussing this, *El Sol* explained: *"(...) the drop in market prices for securities will cause severe disruption to banks that hold large portfolios of stocks, because, as it is common practice, these are these currently show up in banks' balance sheets at their market value at 31 December of last year"*[281]. Anecdotal evidence in some banks' minutes and in newspaper articles suggests, however, that in parallel to marking their assets to market at the end of the year, some banks had established a parallel reserve to compensate for potential drop in asset prices in the future (which was certainly not expected to be as large as they were). For example, Banco Urquijo de Madrid reported having done so

[282]. Similarly, Banco Español de Crédito and Banco Hispano Americano seem to have proceeded in a relatively prudent manner in terms of asset valuation[283]. That said, it is hard to argue that banks could have been prudent enough to anticipate an provision for an average fall in asset prices of 32%.

The board of the CSB met on November 18th to discuss the issue. All members of the board attended the meeting. The Banco de España was represented by its vice-governor Mr. Pedro Pan, and all major banks were represented by either their presidents or members of their boards[284]. The President Delegate opened the discussion by summarizing the main points that he had received from banks' responses to his letter:

- All banks were affected by the stock market shock and most banks were going to make substantial losses in 1931 if they had to mark their portfolios of stocks down to prevailing market values.
- Some banks were willing to absorb these losses, and some were not. This, of course, depended on the size of the losses.
- A possible solution was to value assets purchased before April 1931 at an "estimated" price, and those acquired after April at their historic purchase value.
- Individual bankers were more exposed to the problem, as, in case of capital losses, they did not have limited liability.
- Dividend policy ought to be discussed.
- The decision of reflecting stock losses or not should consider the effects on tax payments. The decision should take into account the trade-off between reflecting stock market losses and paying *too much* taxes.
- Whatever the decision was, a fiscal exemption should be asked for 1932.
- The solution should be reached before the end of the year, when banks had to report to their shareholders and liquidate profits.

The description of the problem by the President of the CSB shows the gravity of the situation and highlights the importance of the arrangement in avoiding a second round of distress for banks once they would have to publish their annual reports. At market prices, many banks would have become insolvent even

with more liquidity assistance from the BdE. First, marking assets down to market would have required ackwnowledging large losses that would have in turn required substantial recapitalizations for a large number of banks in a moment where raising capital was definetely not easy. Second, revealing losses by banks in their annual statements would have revealed individual weaknesses, and thus increased the probability of another bank run, this time targeted at specific institutions that revealed losses.

Once the nature of the problem was exposed, banks started expressing their individual views. The first discussion was on whether one rule should fit all banks. On the one hand, there were a variety of exposure levels in bank balance sheets, which required a variety of optimal individual solutions. On the other, if some banks were allowed to take different paths, public opinion would be suspicious about each banks' individual motivations or balance sheet problems to take one or other decision. However, discussions between different banks ended up in the approval of a voluntary solution, to which banks would be allowed to adhere or not, at their convenience.

The next question, and the main one, was about the valuation of stocks and public debt. It was precisely the banks that had not marked their assets up to market during the late 1920s, the ones that in 1931 suggested that it was "ethically" incorrect that banks were simply allowed to stick to book values ignoring the sharp decline in market value. This was argued by at least two banks (Banco Español de Crédito, BECR; and Banca Arnús, BAAR). Both had purchased more shares and bonds, and their portfolios continued increasing, but—according to the points they made at the CSB meeting—they had chosen to be more *prudent* in their valuation. By keeping historic values, they had created a "shadow reserve" as stocks revalued, that could now help to smooth the shock. However, their opinion was not taken into account, probably because this was an exception to what had been considered common practice in banking; banks marked their assets to market at the end of the year. This of course, had been a relatively easy exercise in the previous years, as asset prices had boomed almost uninterruptedly since the mid-1920s. In response to the arguments made by these two banks, however, most banks argued that the drop in stock prices did not mean that these were necessarily losses, and therefore should not be reflected as if they were. Banco Hispano Americano (BHAM), Banco Central (BCEN) or Banco de Aragón (BARA)(among others) claimed that a loss was not such thing until the

asset was sold, and therefore banks should not be forced to mark their assets down to market. Instead, they should be allowed to value shares and bonds, if anything, at 1930 prices[285]:

> *"This is probably the most difficult moment for the Consejo Superior Bancario; the future of the Spanish banking sector depends on the agreements reached here (...). It has been rightly argued that this crisis did not originate in the management of banks, but was caused by something external to the banking sector, which has nothing to do with bank's decisions. The norms we are seeking to introduce are of strict morality in order to adapt the banking sector to something that is not the consequence of its mistakes. It is hard to answer the question of what is a loss. In banking, a loss is not such thing unless it is definitive, and this is not the case today. Moreover, today's stock market quotations are not a reality but a fiction, because the market is not acting freely, thanks to wise and needed restrictions."*

Interestingly, this opinion was shared by the vice governor of the BdE, Mr. Pedro Pan. The BdE, which lent to all CSB banks against public debt and shares and held these assets as collateral, would have been severely affected by the alternative if this implied bank failures, as the collateral it would have ended up holding would have been severely depreciated. This, of course, was also a crucial motivation of the decision to suspend mark-to-market.

The discussion about asset valuation had another interesting side. It was not only about the value of shares and bonds of private companies, but also about public debt, whose price had also dropped substantially following April (Figure 5.6a). The representative of the Chamber of Commerce (Mr. Manuel Velasco) suggested that the Banco de España should reduce the haircut it applied to Lombard operations against public debt as collateral, as this would increase its price and drive the recovery of the stock market before the end of the year, which could already be a powerful move. By virtue of its Statutes, the BdE could not accept public debt on a Lombard operation above the 80% of its value, so haircuts could not go below 20%. Moreover, Mr. Pedro Pan (BdE) immediately opposed to any reduction in haircuts. It was not only the BdE who declined this proposal; again Mr. Pablo Garnica (BECR) was against that. He found it unfair that banks holding public debt which was already overvalued–as it was not reflecting

market prices–could benefit from the reduction of the haircut. However, there was a powerful argument against Mr. Garnica's position. As it is also reflected in the quote at the beginning of this chapter, Mr. Álvarez-Valdés, who represented Banco Hispano Americano (BHAM), the second bank in size after BECR, claimed that there were no doubts about the morality of the proposals, as banks were affected by a shock that had nothing to do with their previous activity (with their fundamentals). It had been a purely exogenous shock, caused by political factors, that banks ought to be protected from, rather than penalized by.

The discussion between the two largest banks reveals that, following the liquidity shock and the stock market shock that took place from April, there were two possible equilibria, and these were clearly reflected by the different avenues the two largest banks had taken after April. On the one hand, BECR, who suffered very strong liquidity shortages during the previous months, had to resort to contract its loan portfolio drastically. By the end of the year, it had called back more loans than any other Spanish bank (see Chapters 3 and 4). This certainly reduced the bank's future revenues, but kept it afloat without much assistance from the BdE. According to the points made in the meetings, it was also helped by not having to devalue its portfolio, as it had been more prudent in marking shares up to market during the boom. On the other hand, BHAM, who suffered also strong deposit withdrawals but had no significant problem accessing the discount window of the BdE (especially compared to BECR) could keep lending, but its survival was conditional to the Minister of Finance allowing for banks to not mark stocks and public debt to market.

The particular equilibrium in which banks could found themselves had very different implications for the system as a whole, especially considering that these were the two largest and most widely branched banks in Spain. Both the Minster of Finance and the CSB decided to keep the banking system in the second equilibrium: the one with overvalued portfolios but the one that allowed to prevent an even stronger contraction in credit by triggering a second round of bank distress as soon as losses were realized when banks published their annual reports in March 1932. This was reflected in the final decision. Banks were allowed to value public debt and "first order" companies' shares at their market prices if they had been bought after the drop in market values. If they had been bought before the crisis, then they could be valued at their end-of-year value in 1930 (all types of shares and public debt). The President of the CSB mentioned explicitly that the

decision had been reached in order to *"(...) prevent the situation from affecting bank's credibility"*[286].

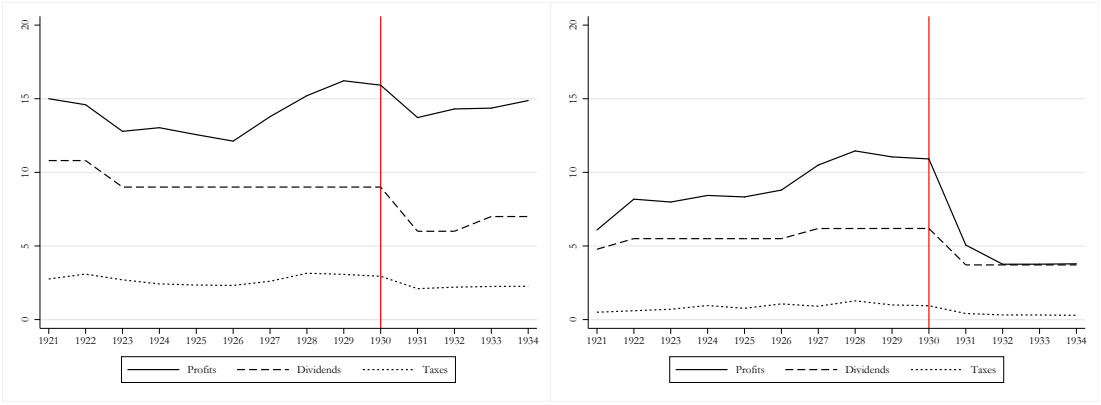
There were several proposals as for how banks should reflect the operation in their balance sheets. As the CSB distributed the balance sheets (it printed 500 copies which then could be reproduced), these would become eventually public, and banks wanted to avoid reflecting unexplained variations in book values. The goal was to avoid the public from realizing the magnitude of the crisis, as suggested by the representative of Banco Guipuzcoano (BGUI), Mr. Victor Artola. To do so, the solution was to create a "Securities Fluctuation Fund" (*Fondo de fluctuación de valores*), which appeared for the first time in the liability side of banks' balance sheets by the end of 1931q4.[287] If banks did not want to reflect the depreciation of shares and public debt in their balance sheets, then they would have to create this account for the value of the depreciation. This would be created partly with their reserves and partly with the profits from other banking activities that banks earned in 1931, in case there were some. As time passed and shares recovered their value—that was the expectation—banks would then progressively reduce this account and rebuild their reserves by the same amount. This solution left the asset side of banks' balance sheets intact (Figure 5.7). The obvious problem was that since there was no market price for most securities, there was room for discretion on valuations, which implied that banks might allocate different amounts to the Securities Fluctuation Fund. Moreover, amounts allocated on the Fund could then be a signal of the exposure of a bank to the drop in asset prices, thus creating an incentive for banks to keep the Fund as low as possible.

After the discussion on the valuation of banks' portfolios and the new accounting rule, banks discussed whether they should pay dividends or not. Some banks considered it necessary to keep their shareholders confidence, while others preferred to avoid dividend payments. If some banks were paying dividends and some were not, this would be again interpreted by depositors as a sign of weakness and could trigger another bank run, this time caused by fundamental weaknesses at the bank level. This was the position of Banco de Vizcaya (BVIZ), a clear exponent of "universal banking", that had suffered a strong shock with the drop in the stock market. In fact, this bank suggested to pay no dividends, as this could be interpreted as a sign that banks "were not aware" of the crisis the country was going through. Interestingly, it was again BECR the bank that stands out as the

one in favor of paying dividends. In fact, this bank had already paid dividends in June, in the middle of the crisis, when it was suffering severe liquidity pressure. Having paid dividends, BECR was concerned that it might be affected by the loss of confidence caused by other banks suspending dividend payments. In the same line, Banco de Bilbao (BBIL) suggested that not paying dividends would be interpreted as general—and not particular—weakness. Depositors might be unable to identify bank idiosyncrasies and not paying dividends might affect all banks, as had happened during the bank run earlier in the year. Others, like BHAM claimed that even if small, some dividends ought to be paid. Some other banks suggested that it was unfair to cap dividend payments, as some banks did not have depreciated assets in their balance sheets and this should be also considered.

Finally, an agreement was reached and banks were allowed to pay limited dividends. These could not exceed 60% of what they paid in 1930; profits made above this ought to be used to reduce the "Securities Fluctuation Fund". Profits used to reduce the Securities Fluctuation Fund would not be taxed. In case banks reserves were smaller than the value of the depreciation suffered, then no dividends could be paid. Some banks like Soler y Torra (SOLE) suggested that the limitation should be extended to all firms, not only banks, so shareholders and eventually depositors would be less suspicious about banks' health, but this was finally limited to banks. I have been unable to find information on all banks' dividend payments, but Figure 5.8 shows profits, dividends and taxes paid by two of the largest 6 banks: Banco Hispano Americano (BHAM) and Banco Urquijo de Madrid (BUMA). Even Banco Urquijo de Madrid (BUMA), which, as shown in Chapters 3 and 4 was by far the most affected bank during 1931, continued to pay dividends. Again, with an average depreciation of 35% of banks portfolios of stocks, having to mark stocks and bonds to market, even if banks managed to survive by recapitalizing, they would have not been able to pay any dividends to shareholders.

The last big topic that banks discussed was how they would pay taxes in the following years, as all banks agreed in that they should apply to a tax exemption given the difficulties they had experienced. Although the final agreement did not include any mention to taxes, in May 1932, a law was passed which allowed banks to not pay any taxes on the revaluation of their portfolios during 1932 and 1933[288]. As long as the revaluation of their portfolios was smaller than the devaluation experienced in 1931, they would not pay any taxes on capital gains



(a) Banco Hispano Americano (BHAM) (b) Banco Urquijo de Madrid (BUMA)

Figure 5.8: Bank profits, 1922-1934 (million pesetas)

Source: *Libros de Actas del Banco Urquijo de Madrid* and *Memorias y Balance del Banco Hispano Americano* (various years).

arising from that revaluation. If revaluation exceeded the previous depreciation of their portfolios, then they would pay normally. The law took into account the differential impact on banks that were not subject to limited liability, as these were exempted of paying taxes if they had to increase their paid-in capital.

Finally, there were two crucial parts of the solution that the CSB and the Minister of Finance reached and that responded to banks' concerns about the publicity of these arrangements. First, secrecy about the magnitude of the banking crisis was something all actors wanted to preserve. However, full secrecy was also a risk. The BdE warned that there should be no leakages to the public about the actual situation of banks, but that the CSB should have all information. The President of the CSB endorsed the point made by the BdE and claimed:

> *"these* [accounting] *proposals only make sense if the CSB is informed about the real situation of all banks, and since this is not the case, I am going to have to decide without knowing the real situation. This will have good effects on some banks and bad effects on others. Knowing the external face of banks is not knowing their true situation".*

Some banks also complained about this. For example, the representative of Banca Arnús (BAAR), a bank that had maintained historic value for its stocks and bonds throughout the 1920s, claimed that:

> *"(...) it could happen that some banks were in a situation that they*

> *had not only to declare a loss but also losses due to mismanagement or irregularities, so I propose that all balance sheets are shown in their full crudity before a decision is made. (...) We might find a solution that does not involve forging the balance sheet*".

Something that Mr. Garnica (BECR) also denounced:

> *"(...) if a bank is in a bad situation, it would be a bad idea to allow it to continue only to find out tomorrow that its balance sheet was not true.*"

These statements reveal strong information asymmetries among banks and the BdE, as the latter did not receive monthly but only quarterly, consolidated balance sheets. More importantly, these asymmetries appeared also between banks and the institution that was effectively playing the role of agent (supervisor) for the Government and the BdE in the banking system, the CSB. By the end of the year, the CSB could not trust if all member banks were submitting real balance sheets.

Second, and also related to the way information flowed during the crisis, banks wanted to avoid by all means the agreement they had reached with the Minister of Finance to be published as a law in the official journal, the *Gaceta de Madrid*. Instead, they preferred this to be a "banking norm", whose publicity was much more at their discretion, and did not look like an imposition from the Government, but rather a solution stemming as a consensus. Therefore, when the decision was taken, it was not officially published in the *Gaceta*, but the CSB made it mandatory for banks to communicate the decision to their shareholders and board members, something that was done when the annual meetings of banks took place and the annual reports were published (i.e. March 1932).

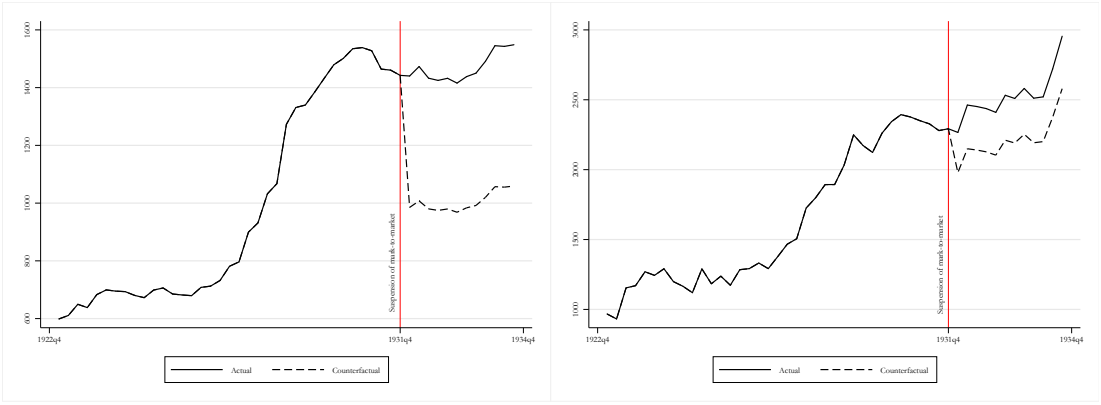
5.3.2 Counterfactual analysis

The measure taken by the Ministry of Finance at the initiative of the banking sector (represented in its vast majority at the CSB), explains why most banks did not suffer any capital losses in the years following the crisis, despite the collapse in the price of privately issued securities. In this sense, counterfactual analysis can be informative. How would have banks fared if the Ministry of Finance had

not agreed to suspend mark-to-market accounting?

First, Figure 5.9 compares the evolution of the portfolio of public bonds and private stocks and bonds held by banks with a counterfactual estimation for the case that mark-to-market was not suspended. Because of lack of individual bank data on the exact composition and valuation of stocks, this counterfactual estimation needs to be considered a first approximation to the actual case. That said, capital losses appearing from the counterfactual estimation are, in some cases, large enough to imply a much higher degree of bank distress and a number of additional bank failures during 1931. I mark securities down to their value in December 1931 compared to their average value during 1930 (what the CSB agreed on) by using the price indexes provided in Figure 5.6a. This causes public debt to be marked down by 12.7% and private securities (shares and bonds) by 31.6%. Precisely because contagion through marking to market relies on the fact that one bank's valuation depend on other banks decision to sell the same asset, the counterfactual analysis needs to be taken as a rough approximation, because I am implicitly assuming that by December 1931 banks did not know that mark-to-market would be suspended (which they did). Also, I am dealing with stock and bond price indexes and with consolidated balance sheets, which limits the accuracy of the calculation (I am in the process of collecting more archival material to learn about the composition of bank portfolios of shares and stocks). Figure 5.9 shows the results of the simulation for the consolidated balance sheet of CSB member banks. Despite the problems associated with working with aggregate figures, this is a lower bound estimate, as it assumes that after 1931, asset prices remained flat, while in fact they continued to fall (Figure 5.6a).

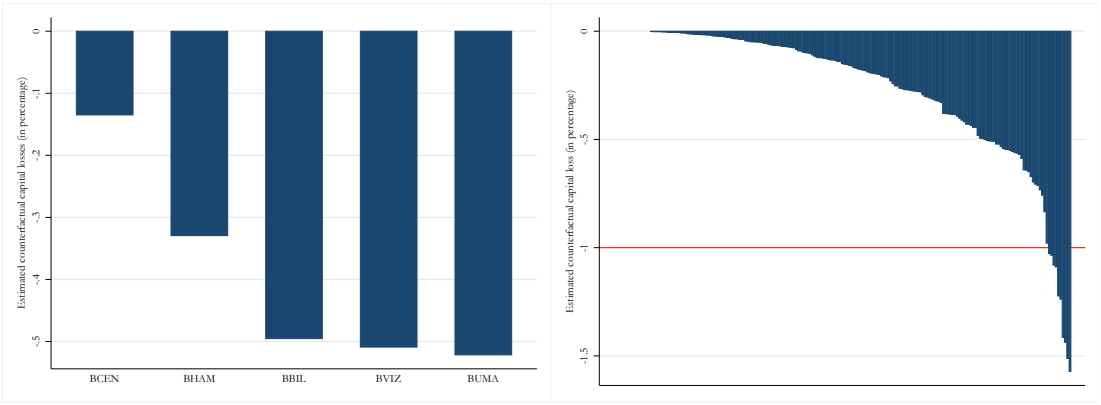
A second step is to estimate the erosion of bank capital that would have taken place in case mark-to-market was not suspended. For this, I subtract the difference between the value of banks' public and private securities' portfolios and their counterfactual values from the sum of capital, reserves and the provisions allocated in the "securities fluctuation fund". These values are calculated for 1931q4. First, for the largest banks, results are reported in percentage capital loss in Figure 5.10a. I exclude Banco Español de Crédito (BECR) from this estimation because according to its stance during the CSB meetings, this bank had not marked assets to market, and therefore the calculation would largely overestimate its capital loss. The same results for all CSB-member banks (excluding the top six banks) are reported in Figure 5.10b.



(a) Private stocks and bonds (b) Public debt

Figure 5.9: Actual and counterfactual estimates of banking sector's securities portfolios (1922-1934)

Source: see text.



(a) Top banks (b) All banks

Figure 5.10: Estimated counterfactual capital losses (1931q4)

Note: chart (b) excludes foreign banks. Source: see text.

This exercise produces two findings. First, distribution of dividends would have been impossible if mark to market was not suspended (and so would have been taxes paid). Second, the estimation still shows that the largest Spanish banks were capitalized enough to absorb the losses without suffering the full erosion of their capital. This, of course, does not necessarily mean that a second round of bank distress would have been avoided due to high capital ratios, as three large banks–Banco Urquijo de Madrid (BUMA), Banco de Bilbao (BBIL) and Banco de Vizcaya (BVIZ)–would have lost around 50% of their capital. As mentioned above, this estimation might be exaggerating the impact of the drop in market prices in these banks, as they might have established parallel reserves when they marked stocks up to market during the stock market boom. They

might have also not marked all stocks up. However, the estimates are large enough to consider that large losses would have been unavoidable. This is the case even considering an extremely prudent behaviour during the upswing, either not marking assets up or establishing a parallel reserve. While the latter seems plausible and needs to be taken into account, the former would have gone against what had become common practice in banking (i.e. marking assets to market at the end of the year). In fact, reading banks minutes during 1930, they already aknowledged a slowdown in issuance of new shares and a general stagnation of stock market activity. However, from prudence to having anticipated a 32% drop in asset prices there is a long way. Even considering that banks could have technically survived that shock thanks to their capital buffers, large losses would have been visible in their annual reports issued in March 1932, and they were not.

The picture changes substantially when all banks are included in the sample. Results from Figure 5.10b show that capital losses for the rest of the banking sector (excluding the top 6 banks) would have been, in the case of ten banks representing 3% of total assets, a cause for unavoidable failure. This calculation also shows that 41 banks accounting for 50% of the total banking sector's assets would have lost 50% of their capital. Again, without precise estimates of each bank's portfolio and individual stock valuation, this figures might be overestimating the shock to their capital. However, again, the figures are large enough to conclude that even in the case of extremely prudent behaviour in banks' asset valuation, large losses were avoided, and this kept a number of banks that would have otherwise failed (or need recapitalisation) afloat.

CSB banks' emphasis in designing the accounting rule in a way that minimized the scope for the public to learn about bank-specific weaknesses played a role that is similar to the one played by clearinghouses in the United States prior to the establishment of the Federal Reserve, whereby members of the clearinghouse provided joint liquidity to banks in trouble and suspended the publication of information on individual banks until the crisis had eased[289]. In both cases there was, *ex-ante*, a degree of asymmetry of information between member banks. In contrast to the case of clearinghouses, where interbank lending instruments were created during crises, the CSB did not attempt to solve bank's liquidity problems by creating joint liabilities. This lack of interbank instruments did not pose a strong impediment to fight the solvency problems that banks were facing, but it shows that it would have been very difficult to arrange a fully bank-based solu-

tion to banks' liquidity pressure. The main reason was that the solvency problem affected almost all banks, so the cost of banks' free riding on other banks was dwarfed by the individual benefits of being allowed to avoid marking assets down to market. While some banks discussed the *ethics* of the measure, none opposed it formally. Contrastingly, the same solution would have not been possible to solve the liquidity crisis, as banks would have only been ready to trade public debt.[290] This was not an option until it was not clear that public debt would also be protected by the new accounting rule, as its price was falling and trading collapsed (Figure 5.6). So between April and June, when liquidity pressure was strong, banks could rely only on the BdE to fight deposit losses. As a result, banks that did not obtain liquidity from the BdE had to call back loans and could not borrow from other banks. The bank-based solution worked to solve solvency issues, but it did not help banks to become more liquid and to redistribute liquidity through the interbank market. This helps understand the correlation between the allocation of emergency liquidity and bank lending to non-financial firms and families described in Chapters 3 and 4. Efficient distribution of BdE liquidity through interbank markets was not possible. There was no interbank market for bills of exchange–as explained in Chapter 2–and the most widely accepted collateral (public debt) traded at a very large and increasing discount between April and September. Moreover, information on individual bank health was not readily available, as revealed by the poor information held by the CSB, thus keeping counterparty risks high, and making it harder to find incentives to redistribute liquidity.

This section has shown that an essential part of banks' ability to overcome the shock in the stock market, which would have added a threat of generalized insolvency to the already severe liquidity problem. If banks had not reached the agreement with the Minister of Finance and the BdE that avoided a sharp devaluation of their portfolios, Spain would have witnessed a more severe banking crisis, in which bank failures would have been much more prominent than they were. As time passed, the price of publicly traded securities started recovering, especially after 1933. Thanks to these policies aimed at protecting the asset side of bank balance sheets, bank profitability contracted very little during and after the crisis, especially considering the size of the shock.

5.4 Banks vs. savings banks

Another important element in order to understand why Spain avoided a chain of bank failures during the 1930s is the contrasting behaviour of depositors from banks and savings banks (*Cajas de Ahorro* in Spanish), as it was only banks that suffered deposit withdrawals (Figure 5.11). Savings banks–the main store of popular classes' savings–were almost entirely isolated from the shock that banks suffered in their liabilities; savings banks continued to have positive inflows of funds during 1931[291]. Regarding assets, savings banks' were almost only invested in public debt. Consequently, the suspension of mark-to-market also protected savings banks' assets. The main difference with banks then, was mostly on the behaviour of liabilities.

The isolation of savings banks from deposit withdrawals was not necessarily a universal issue. In countries where deposit withdrawals did not have such a strong political component as in Spain, savings banks also suffered. This was the case of the German banking sector. As Balderston (1991) showed, German savings banks suffered sharp deposit withdrawals comparable, in percentage terms, with those of credit banks during 1931 and 1932. Savings banks, however, recovered their deposits faster than banks. For the case of the United States, as Schuster, Jaremski, and Perlman (2016) show, Postal Savings banks were the destination of a "flight to quality" during the 1930s banking crises, when they increased their deposits by a factor of 10. During the Great Depression, depositors moved away from unit banks and used postal savings banks as a safe way of putting their money "under the mattress" and finding an alternative for deposit insurance where this was not yet established (Davidson and Ramirez, 2016). However, US Postal Savings banks also contributed to add pressure to the banking system during the 1930s, as they withdrew their deposits from banks (O'Hara and Easley, 1979).

Traditionally, Spanish savings banks had different goals and attracted different types of savings. While banks focused on financing industrial and agricultural businesses, savings banks were more focused on social spending[292]. However, since the nineteenth century, both types of institutions had increased their competition (Fernandez Clemente, 2005; Comín, 2008). This did not only happen in purely financial grounds, but also in the political arena. A landmark in this competition was the 1921 Banking law. This new regulatory framework provided banks with strong advantages compared to savings banks, by reducing the costs of external

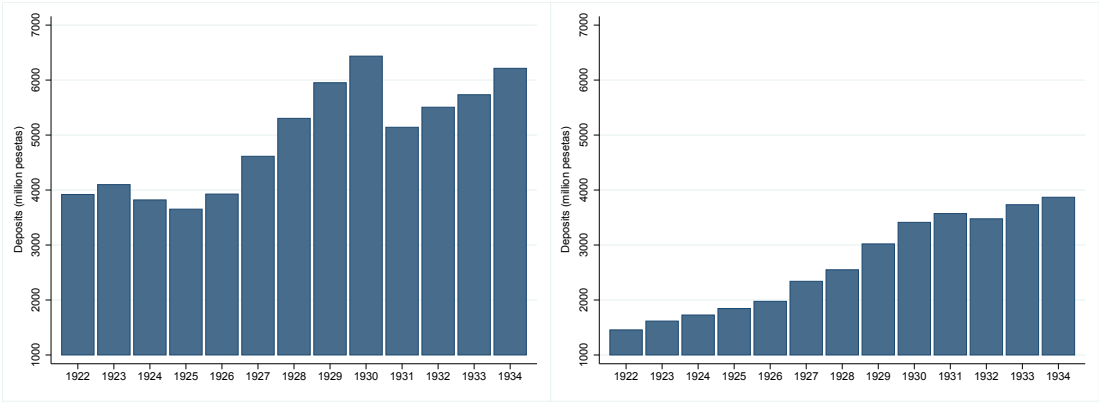
funding (see Chapter 2). The law allowed banks to access the discount window of the BdE at reduced rates, while savings banks were left out of the reform (Martín-Aceña, 2005).

Type of depositors	Share
Pensioners (children and housewifes)	40.5%
Working class (farmers, industrial workers, servants)	33.3%
Middle class (merchants, industrialists, other employees, soldiers, professionals, priests)	14.7%
Institutions (brotherhoods, firms, etc.)	0.5%
Rentiers	0.3%
Others	10.7%

Table 5.4: Types of depositors in savings banks (1923-1930)
Source: Fornies (1979, p.293).

Regarding the impact of the 1931 crisis, however, the main differential trait was the type of depositor. Fornies (1979) provided detailed information on depositors in savings banks. As can be seen in Table 5.4, the vast majority of savings banks' deposits came from popular classes. The table shows the percentage of clients (not of the value of deposits) coming from different classes. Although no systematic or detailed data is available for the banking system, a comparison can be done between the average balance of deposit accounts in the two types of institutions. The same author provided the evolution of average deposits at savings banks; by 1930, the average balance on savings accounts was of 95.25 pesetas[293]. During the same year, the average agricultural worker earned 5.3 pesetas per day and the average salary of an industrial worker was 7.6 pesetas per day (Maluquer de Motes and Llonch, 2005). This means that the average account on a savings bank was somewhere between 12 and 17 daily wages. Combining data from the *Boletines del Consejo Superior Bancario* and the *Anuario del Banco Hispano Americano (1930)*, a similar picture can be drawn for one of the largest and most widely branched banks in Spain at the time, Banco Hispano Americano (BHAM)[294]. In 1930, BHAM held 169 thousand client accounts for a total of 1067 million pesetas. Thus the average balance per account was of 6312 pesetas, more than sixty times the average account of a savings bank, and somewhere around three years worth of daily wages. These are only averages, and could therefore be driven by outliers such as large firms' deposits, etc. This being the case, however, this certainly did not happen in savings banks.

One way in which banks tried to compete with savings banks was to open their own subsidiary savings banks. By 1930, from the total of 212 savings banks, 40



(a) Banks (b) Savings banks

Figure 5.11: Deposits in financial institutions (1922-1934)

Note: in savings banks, dark blue is for normal savings banks, and light blue is for savings banks that operated as subsidiaries of banks. Source: author's database (see text) and *Anuario del Instituto Nacional de Estadistica, 1922-1934*.

were subsidiaries of banks. Most banks opened their subsidiary savings banks along with their regional expansion, which took place from the end of the First World War, although some had already been established by the late nineteenth century. By the end of 1930, banks held 68% of total deposits in the economy, non-subsidiary savings banks held 20% and subsidiary savings banks held the remaining 12%[295]. Interestingly, Figure 5.12 shows that deposits in both types of savings banks were more stable than banks during the 1931 crisis, although deposits in bank-subsidiary savings banks fell substantially in 1932.

The proclamation of the Second Spanish Republic took place after a strong deterioration in public opinion about the role of banks. Close connections between the Monarchy, the Dictatorship and top bankers had become a matter of public domain, as explained above for the case of the oil monopoly and Banco de Cataluña. The growth and concentration of financial power had also been present after the First World War, when banks started expanding their network of branches across Spain[296]. General discontentment with the expansion and concentration of the banking system dominated the late 1920s and the 1930s (Pueyo, 2006; Cabrera and del Rey, 2007). In particular, the arrival of the Republic coincided with strong statements against the *status quo* in the banking sector by the Minister of Finance, Mr. Indalecio Prieto[297]:

> *"I think the Spanish banking system is deeply faulty; the strongest problem being the lack of organization, so the expansion of credit does*

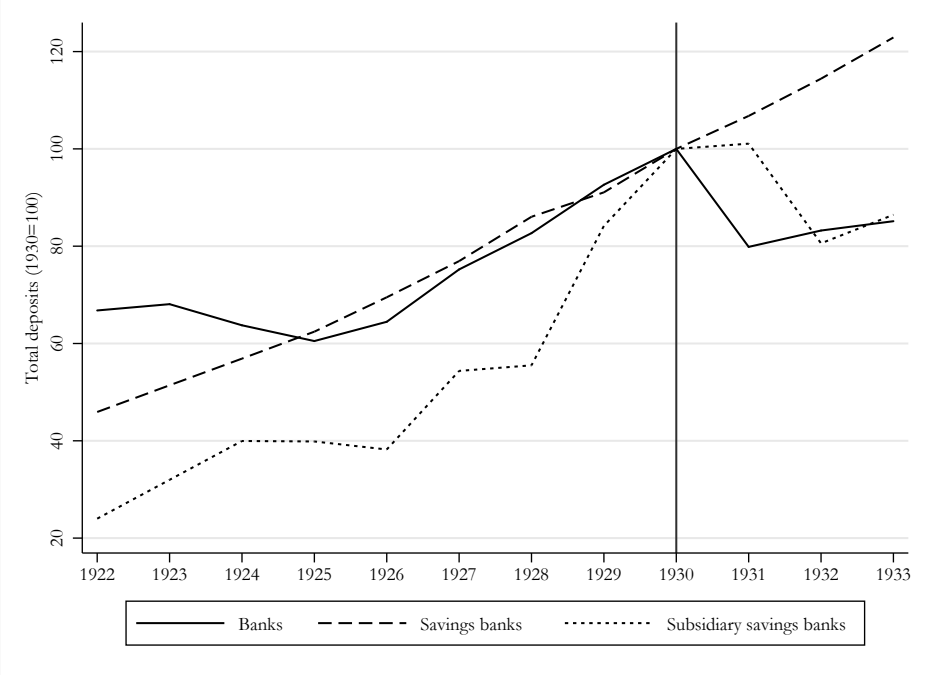


Figure 5.12: Subsidiary savings banks, savings banks and banks' deposits (1922-1933)

Source: for savings banks, *Cajas de Ahorros de los Bancos y Sociedades de Credito, Anuario 1930, Fondo Documental del Instituto Nacional de Estadistica* and for banks, *Boletines del Consejo Superior Bancario.*

> *not respond to truly democratic ends. Banks seem to be, indeed, organized to protect, predominantly, the businesses of its own board members; and bank boards, accordingly, are just cacique organizations, from where they spread the aim of absorbing credit to develop their own firms. I think also that there are too many banks and that including all their branches, they make the banking function more costly."*

Martín-Aceña (1984) documented that other declarations of the Minister of Finance, including threats to capital owners of intervening their bank accounts during the very first days of the Republic contributed to the bank run. In the end, the Ministry conducted an inspection of main banks' accounts in Madrid in order to learn the extent to which they had played any role in the fall of the peseta since 1928 and to the extent to which they were fostering capital flight. The inspection did take place in most banks in Madrid but it was conducted without major incidents or opposition from the banking sector and did not cause any disruption to banks' operations. The newspaper *La Epoca* explained that all banks in Madrid had been inspected in order to see who had withdrawn "unusual" amounts. All banks allowed the government to conduct the inspection, including Banco Urquijo de Madrid (BUMA)[298]. Banco de Bilbao (BBIL) considered that rumours about the intention and the extent of the inspections were exaggerated: *"(...) the alarmist rumours, that, without any foundation, were propagated about the possible intervention of the State in current accounts (...)"*[299]. However, exaggeration of rumors did not preclude deposit withdrawals related to a general fear of expropriation from some sectors of Spanish society, particularly the wealthiest ones and those related to the Dictatorship and the Catholic Church. A quote from the then Minister of War and later President of the Republic, Manuel Azaña suggests that this was also what the Provisional Republican Government thought[300]:

> *"(...) those who wanted chaos extended the rumor, some weeks ago, that mischievous and rebellious individuals would rob the banks. This having proved untrue, it has been the rich who have robbed the banks by withdrawing their money (...)"*

This perception is consistent with the findings of Chapter 3, where I showed that the only strong and statistically significant predictors of deposit losses at the bank level are variables related to political unrest, and not to observed bank-specific fundamentals.

5.5 The role of information disclosure

The case of the 1931 banking crisis in Spain is an astonishing example of the importance of information disclosure (or the lack of) to avoid the aggravation of a banking crisis. The most salient case is, as already mentioned in Chapter 4, Banco Urquijo de Madrid (BUMA). The extent to which this bank was affected by deposit withdrawals–it lost more than 50% permanently–went completely unnoticed by the public and published opinion during the crisis. Figure 5.13 shows the severity and persistence of the shock this bank suffered. In fact, it does not only show that the bank was kept afloat by the continued liquidity provision from the BdE. It also shows that the bank's lending policy was already dependent on liquidity from the BdE before the crisis. After the Wall Street Crash, the bank seems to have lost deposits but continued to expand its credit portfolio by increasing its reliance on the BdE. This is consistent with Figure 4.12 in Chapter 4, which shows the reliance of each bank on BdE credit before and after 1931.

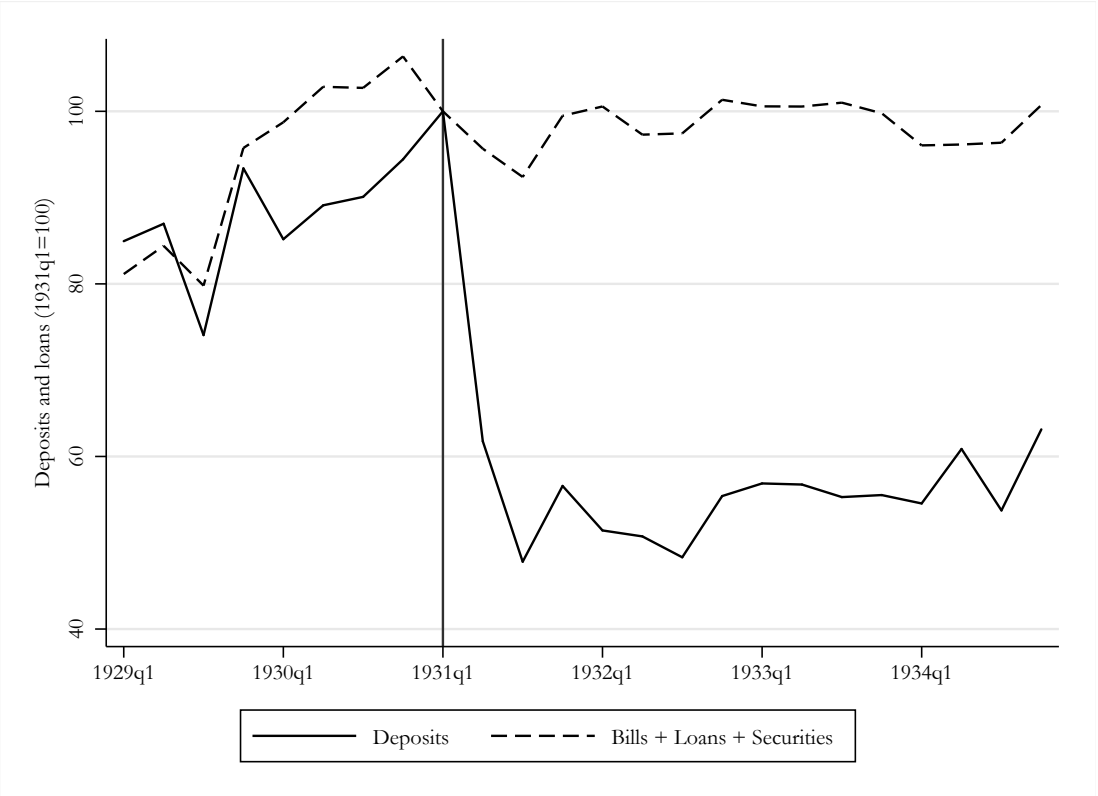


Figure 5.13: Banco Urquijo de Madrid (BUMA), assets and liabilities
Source: *Boletines del Consejo Superior Bancario*

After examining several minutes of different banks, not a single reference to

that case is found. Only one, vague observation to "a bank that experienced problems" can be found in the Minutes of the Consejo Superior Bancario, but it is not clear which bank the quote refers to. All accounts of the 1931 crisis, including the most detailed analyses mention the case of Banco Central (BCEN) as the main bank experiencing problems, but there is not a single mention to BUMA[301]. This is mainly due to the fact that monetary institutions–the BdE and the Government, but also the banking community–held a complete silence about the situation of Banco Urquijo de Madrid.

Reading the minutes and the annual reports of Banco Urquijo de Madrid is also striking. There is not a single mention to that[302]. The bank did not explain why it lost 50% of its deposits and did not make any mention related to it. However, it made an interesting point that confirms that the evolution of the loan portfolio of the bank responded to the continued emergency liquidity provided by the BdE. In the draft of their 1931 Annual Report, Banco Urquijo de Madrid acknowledged[303]:

> *"Our profit account reflects the unavoidable consequences of the contraction in economic activity in all the areas in which our banking and industrial role is present; regarding economic activity, we have stimulated it patriotically without imposing limits to our sacrifices, because we understand that it is only by doing so that we fulfill our duty of attenuating, in the measure of our possibilities, the intensity and scope of this crisis."*

In regards to the origin of the deposit withdrawal, reading the minutes of the BdE does not help either. The case of BUMA is not mentioned. This is striking, since the minutes of the BdE were not public and the latter provided more than one third of the total injection to this bank. There is, however, a report from the Banque de France that sheds light on what happened to Banco Urquijo de Madrid[304]. In a report issued in October 1931, the Banque claimed the following[305]:

> *"(...) with the intermediation of one of its administrators, Mr. Ruiz Senen, (...)* [Banco Urquijo de Madrid] *is also the bank of religious congregations, and the latter, in a state of panic following the latest developments, withdrew the largest share of their deposits."*

In particular, the religious congregation to which the report refers is the Society of Jesus. Studies on Spanish social and economic history had already highlighted the relationship between the Society of Jesus and Banco Urquijo, as well as the connections between the bank and the Monarchy[306]. Similarly, in a book published in 1935 that dealt with the social dimension of Spanish banks, a member of the Socialist Party (PSOE) defined Banco Urquijo as having *"Jesuitic traits"* (Rosal, 1935). More recently, in their study of the political economy of contemporary Spain, Cabrera and del Rey (2007) documented this relationship. For example, these authors explain[307]:

> *"Another important element of the Urquijo Bank was the board secretary, Valentin Ruiz Senen, who became the brother's* [Urquijo's] *right-hand man and sat on more boards of directors than the most renowned members of this business group. (...) The Urquijo brothers and the King had a very close relationship. 'Estanis'* [from Estanislao], *as Alfonso XIII called the oldest of one of Urquijo brothers, very often acted as his personal adviser and represented him on various boards of directors."*

The stance of the Provisional Republican Government on religious matters explains the reaction of the Society of Jesus to the regime change and therefore the severe and persistent shock to Banco Urquijo's liabilities. From the very onset, one of the main political goals of the Republic was to secularize Spanish society and to create a clear line between the State and the Catholic Church. This confrontation between the Government and the Catholic Church, which led to a Government crisis in October 1931, has been long studied by historians, who have dubbed it "The Religious Question". There is abundant evidence of different religious congregations fearing expropriation from the Provisional Government, apart from the Society of Jesus, as documented by Redondo (1993).

One of the strongest opponents of the Jesuits was the Minister of Finance. Sala (2015a,b) documented how the Minister, Mr. Indalecio Prieto opposed strongly to the role of the Jesuits, not only in finance but also in education, one of the areas where the Republic thought secularization was more urgent. Taken this open animosity into account, Velarde (2015) already highlighted the discretion that characterized Prieto's handling of the banking crisis in general[308]. It is very unlikely that Prieto was not aware of the situation. It is much more likely that he valued the importance of avoiding a widespread banking panic or a stronger

depositor run on Banco Urquijo by revealing bank-specific information. As detailed above, in a CSB meeting during the crisis, banks had urged the banking community to avoid, in the measure of possible, revealing any bank-specific detail to the Minister of Finance. Considering how opposed Mr. Prieto was to banks' borrowing from the BdE at reduced rates and, more importantly, how reluctant he was to raise the note issuing limit during the banking crisis (see Chapter 3), it is hard to believe that he was not aware that Banco Urquijo had lost 50% of its deposits and was borrowing heavily from the BdE to remain afloat. As explained above, an inspection of the largest banks in Madrid had been conducted during the very first days of the Republic. This included Banco Urquijo de Madrid[309].

The complete silence about these developments in banks' minutes makes it difficult to conclude, and more research is needed in this front. However, what is clear is that while at some point during the banking crisis, the Minister became well aware of the situation of Banco Urquijo de Madrid, this was never revealed to the public. This is consistent with the Mr. Prieto's strong aim at containing bank failures during 1931 and his deep concerns with the role of capital flight in limiting his options (Velarde, 2015). As with the case of the Banco de Cataluña, where Prieto tried to organize a last minute lifeboat because the bank lacked more collateral to be pledged at the BdE, the discretion with which the case of Banco Urquijo de Madrid was handled reflects that, despite his open animosity to the banking sector, Prieto was not willing to let it fail. The fact that the Minister did not reveal the actual situation of Banco Urquijo de Madrid or what had caused its deposit losses, does not mean that nothing was done about it. On 21 August 1931, a decree was passed banning financial operations that involved religious congregations. Article 3 reads[310]: *"National banks or foreign banks operating in Spain will not authorize the withdrawal of deposits of any kind, with the exception of current accounts used for religious purposes."* Finally, on January 1932, a decree was passed in which the Society of Jesus was forced into dissolution and its remaining assets expropriated[311].

All these developments went completely unnoticed by the public. Today, it is hard to imagine that one of the top 6 banks loses 50% of its deposits and there is not a single mention in the press, the minutes of the central bank, the bank's own minutes or the rest of the banking system's. The complete silence over the situation of Banco Urquijo has two implications. First, it highlights the importance of information disclosure by central banks during banking panics. While the BdE

published weekly balance sheets which included its portfolio of discounts and advances and which were commented frequently in the financial press, information on borrowing counterparties was never disclosed. In fact, it has remained undisclosed until now. It can only be seen by looking at the balance sheet of Banco Urquijo de Madrid and at the daily borrowing from the BdE during the crisis. This explains why previous accounts of the crisis have not identified Urquijo as the main bank in trouble in 1931. Importantly, the strong liquidity needs of this bank and the way they were met by the BdE, explain in great measure why other banks underwent liquidity shortages until the fiduciary issuing limit was raised in the last days of May (see Chapters 3 and 4).

A second implication of the evidence presented here is that the shock caused by the withdrawal of the Society of Jesus deposits from Banco Urquijo should be from now onwards included in the history of the Second Spanish Republic as one of the main events in the 1931 crisis, which marked, to a large extent, the first steps taken by the new regime. Fearing expropriation, the Jesuits withdrew their funds from Banco Urquijo de Madrid. This pushed the bank towards the BdE for emergency liquidity, *crowding out* other banks' needs for liquidity while the Minister of Finance was hesitating on freeing the BdE from quantitative limitations. While this hesitation explains part of banks' liquidity shortages, as explained in Chapter 3, it can also be explained by Mr.Prieto's reluctance to give publicity to the developments in such a prominent institution in the Spanish financial system as Banco Urquijo de Madrid (Díaz Hernández, 1998, 2007). In any case, Mr. Prieto's deliberate silence seems to have been a remarkably successful policy, given the size of the crisis he was dealing with. This should be considered as a crucial factor not only to understand his deep frustration in dealing with deposit withdrawals and capital flight, but perhaps more importantly, as one of the key policy decisions that contributed to contain the bank run and not deepen the banking panic.

5.6 Conclusion

Compared to other countries like the United States, Germany or Austria, Spain enjoyed remarkable bank stability during the 1930s, even after suffering a shock certainly comparable to the ones suffered by these countries. This chapter has presented the three main factors behind bank stability in Spain. First and foremost,

the suspension of mark-to-market accounting allowed banks to remain afloat after the collapse of the stock market. The counterfactual analysis provided in this chapter suggests that a second round of bank distress (this one clearly triggered by solvency issues) and a much more different macroeconomic outlook would have taken place if banks had been forced to mark their assets down to market by the end of 1931. Instead, bank capital remained intact, portfolios of securities continued to show a healthy performance and remained overvalued during the 1930s; banks continued to show positive profits and pay dividends and taxes. In a parallel to recent cases of "zombie banks", this did not mean that lending recovered from the initial liquidity and solvency shocks. Second, the banking panic remained circumscribed to the banking sector, but it did not affect savings banks. Although the latter were also protected by the change in accounting rules, their exposure to the stock market shock was much smaller, as they barely held any privately issued stocks, which were the ones that experienced the sharpest fall in prices. Savings banks accounted for roughly one third of total deposits in the Spanish banking system, and these continued to expand remarkably during the 1930s. Finally, the complete silence of all actors involved in the resolution of the crisis about its actual depth helped contain the banking panic. I documented that news about one of the top 6 banks (and the most influential politically) losing 50% of its deposits permanently have gone completely unnoticed until this very day.

All these factors demonstrate that bank stability in Spain during the Great Depression can not be explained only by the intervention of the BdE as lender of last resort. The intervention of the BdE was a necessary contributor to bank stability, but as I explained in Chapter 3, it was severely limited by the dynamics of a third generation currency crisis. So far, the intervention of the BdE has been described as that of a bank that could provide unlimited liquidity because it was not on the gold standard. Because of that, conventional accounts attribute the few and small bank failures in Spain to this intervention. However, as this and previous chapters show, even in the case that the BdE had had more room to act and was willing to do so, it is very unlikely that it would have managed to fight the effects of the collapse of the stock market on banks' balance sheets only with the provision of emergency liquidity. The lender of last resort intervention was in no way sufficient. Finally, all the evidence presented in this chapter illustrates with more detail the situation of the banking system after the 1931 crisis: banks remained afloat with overvalued portfolios of securities, but lending to the real

economy collapsed. Bank stability did not save Spain from a sizable and permanent credit contraction. Perhaps more importantly, it masked some of the severe political tensions that would shape the fate of the country in the following years.

Conclusion

Throughout the four chapters in this thesis I have argued that the Spanish experience during the 1930s does not warrant describing the country as having escaped the Great Depression. Moreover, Spain does not work as a counterfactual for a hypothetical world in which countries (mostly European) were not attached to the strictures of the Gold Standard. Spain operated an inconvertible but not completely fiat currency, but from 1928 tried hard at pegging its exchange rate to gold. In the process, saw currency mismatches grow in its financial sector. In 1931 banks suffered a sharp liquidity shock, and as a consequence of the limits imposed by capital flight, fiduciary issuing and exchange rate depreciation, monetary authorities were constrained in how much liquidity assistance they could provide to the banking sector. As a result, bank loans and economic activity contracted sharply. The intervention of the Banco de España as lender of last resort was not enough; crucially, the banking sector remained afloat during the 1930s also because of the combination of administrative decisions which had little to do with exchange rate flexibility. It was quite the contrary. Policymakers addressed the 1931 financial crisis in Spain by imposing capital controls before allowing the central bank to lend *freely*. With capital controls in place, then they secured international financial assistance, at the same time that they concentrated and liquidated foreign exchange liabilities held by the banking sector. Once domestic liquidity and currency problems had been addressed–if not fully solved–monetary authorities addressed the asset side of bank balance sheets. The last step towards solving the 1931 crisis was, then, to suspend mark-to-market accounting. This allowed banks to avoid a sharp erosion in capital. It also avoided widespread bank failures and allowed banks to maintain their tax and dividend payments, which would have also collapsed had this policy move not been taken.

The findings of this thesis have implications for three particular strands of literature in economics and economic history. First, as outlined already in the introduction of the thesis, they have implications for one of the strongest ar-

guments about the causes of banking instability during the Great Depression: the link between gold-convertibility and monetary autonomy. Second, they have implications for the theory of central banking in emerging economies; they reinforce the idea that monetary autonomy does not depend only on the exchange rate regime, as implied by the so-called macroeconomic trilemma. Finally, the unearthing of new archival sources and the discussion of new evidence has implications for the historiography of the Second Spanish Republic. Perhaps more importantly, it has implications for the political economy and the economic origins of the Spanish Civil War. As such, the findings of this thesis call for the need of deeper research on the channels of transmission of the monetary shocks that the country suffered between 1928 and 1936—as well as the non-monetary ones—and raise new questions that further research can address in order to improve our understanding of the links between the Great Depression and the Spanish Civil War. The following subsections discuss each of these themes briefly, outline the limitations of this thesis and suggest the direction that further steps of research might profit from taking.

6.1 Implications for the literature on the Great Depression

The argument I have put forward and the evidence I provided to back it suggest that conventional accounts on the developments in banking in Spain during the Great Depression critically overlook a number of crucial aspects. This has resulted an overly optimistic picture of the impact of domestic and foreign shocks to the Spanish economy during the Great Depression. Instead of an account that focuses on bank failures, the Spanish case suggests that other, alternative measures of bank distress and/or banking crises might be of high informative value. For example, my findings suggest that, regardless of central bank interventions or the suspension of convertibility, liquidity shocks to the banking sector should be given more importance. The Spanish banking system, as most other countries affected by bank runs during the Great Depression, exhibits a very strong correlation between bank deposits and loans outstanding. While inferring causality is problematic because changes in bank deposits might just reflect a concomitant creation or destruction of loans, there is evidence in the Spanish case (as in other cases mentioned in Chapter 3) that liquidity shortages seem to have an impact in the longer term lending behaviour of banks, causing a flight to safety as their

liabilities revealed responsive to economic shocks or political developments. Moreover, I have shown that, in Spain, even considering political and social instability, banks that were not under liquidity pressure continued to lend throughout the 1931 crisis. Even more so, if given enough liquidity support from the central bank or if recovering deposits fast enough, even banks affected by deposit withdrawals continued to lend also after 1931. My findings, are in line with recent research on the United States by Richardson and Troost (2009) or Postel-Vinay (2016), who highlight the importance of liquidity shocks for the supply of bank loans, even if they do not go necessarily hand in hand with widespread bank failures.

My findings are also in line with the recent work of Baubeau et al. (2018) for France. As in the Spanish case, these authors found that liquidity shortages at the bank level explain the depths of the French economic contraction of the 1930s, and challenge the traditional explanation that focuses mostly on the *"gold standard mentalité"* or "gold illusion" that dominated the historiography so far. Somewhat in contrast with the revision of the French case, however, my findings suggest that the *"gold standard mentalité"* did indeed play a role in Spain, which is a country that is commonly understood as having forgone the gold standard and thus having enjoyed a *superior* monetary regime that allowed it to escape the Depression. I show that Spanish policymakers, just as their counterparties throughout the world at the time, were also affected by this "gold illusion". They tried to join the gold standard as late as in March 1931, because they saw this as the only way of achieving monetary stability and international credibility. This was, in fact, part of Spain's agreement with the Bank for International Settlements in 1930. After the 1931 crisis, Spain pegged the peseta to the French Franc (to gold) in 1932, when the system was already in the process of dismantling. In short, Spain also found itself trapped in "golden fetters".

Another important implication this thesis has for the underlying causes of banking stability (and instability) during the Great Depression is that bank failures are not necessarily the best metric to use. They of course do a good job comparing countries to the case of the United States, where thousands of banks failed during the 1930s, but they fail to acknowledge more subtle but equally dangerous connections between bank health, bank lending and the real economy. I have shown that the reason why the international and domestic historiography of the Gold Standard and the Great Depression praise the Spanish experience during the 1920s and 1930s as the main example of how flexible exchange rates

(and the room they open to lender of last resort interventions) explain banking stability during the Depression lies precisely in having overlooked these more subtle factors. The evidence provided by the unearthing of a wealth of archival sources suggests that Spain, a developing and emerging-market type of economy, needed other policy moves to keep its banking sector afloat amid the multiple domestic and international shocks. Operating a flexible exchange rate and a gold-inconvertible currency was not enough to keep the Spanish financial sector alive during the 1930s. Key government interventions were needed. Capital controls, nationalization of short term debt denominated in foreign exchange and the suspension of mark-to-market accounting were non-monetary interventions without which the Spanish banking sector would have fared much worse.

Finally, the revision of the Spanish experience during the Great Depression also highlights the importance of taking measures of financial development into account in cross-country comparisons during the period. In this sense, conventional arguments about the links between exchange rate depreciation and financial stability rely strongly on the importance of depreciation in avoiding deflationary pressures that hit bank balance sheets through debt-deflation spirals, but they overlook other important factors. Exchange rate depreciation can be a blessing or a curse, and the comparative levels of financial and economic development of a country make a difference in this. As I have argued, one can not use the same framework to think about the impact of currency depreciation in the United States or in Britain, because these were countries whose banks were not necessarily exposed to currency mismatches. In contrast, countries like Spain but also Germany show that currency depreciation (frequently accompanied by capital flight) can be have strong destabilizing effects on banks. Moreover, different levels of money market development are also key to understand countries' limitations to deal with financial crises. I have argued that this mattered in the Spanish experience because monetary authorities relied on banks accessing the discount window of the Banco de España by using public debt which, hit by rumours of default right after the regime change of 1931, saw its price collapse. This left banks' liquidity dependent on holding eligible bills of exchange to access the discount window. Lacking a liquid and developed money market on privately issued securities–as the one in which the Bank of England operated, for example–access to emergency liquidity suffered from important asymmetries between banks. Under a constrained central bank that could not expand its balance sheet at banks' demand, differential access to the discount window had implications for bank

lending.

This thesis does not, of course, aim at invalidating the argument about the links between the Gold Standard and the Great Depression as a whole. It however, tries to emphasize the importance of non-monetary interventions in order to explain bank stability. The Spanish case is only a valid counterfactual for countries on the Gold Standard if specific and key government administrative interventions are taken into account. The relationship between exchange rate depreciation and bank stability needs to take financial development into account.

6.2 Implications for the literature on the history and development of central banking in emerging economies

When Walter Bagehot wrote *Lombard Street* in 1873, he did not aim at a universal rule that all countries should–and more importantly, could–follow. Even if he did so, this is not how we should read his work. As recently pointed out by Ugolini (2017), Bagehot's work is better understood as a positive description of the London money market, which was exceptional, not only in its organization, but also as the center of the international financial system. The bill on London was the most liquid asset at the international level. As such–to use a modern term–Bagehot's "external validity" relies heavily on the level of financial development of a country and on its relative position as issuer or holder of large-enough amounts of an international currency of reserve.

As many other ideas in the history of economics, the so-called Bagehot Rule (which I discuss in Chapter 4) has been used, and to some extent, one might argue, abused. Describing the very special London money market, Bagehot prescribed that the Bank of England should lend at above normal-time market rates, on what was considered good collateral at normal times, and at banks demand. He also argued that interest rate had to be raised early in the panic, to take advantage of banks' differential elasticities of demand for central bank money and that the Bank of England should make it clear beforehand that it was ready to do–to use a modern term again–"whatever it took" to assist illiquid but solvent banks within the "mandate" outlined by the rules outlined above. My thesis sug-

gests that the selective interpretation of Bagehot's *prescriptions* has also helped to paint a simplified picture of central banking in emerging, peripheral economies, in particular during the Great Depression.

First, I have argued that a non gold-convertible currency is not synonym for a fiat currency. The Spanish peseta was backed by gold and silver (Martín-Aceña et al., 2013), and changes in the only completely fiat part of the monetary base were subject to Government approval. The monetary base, therefore, could not respond freely to demands of liquidity from the banking sector. Importantly, this implied that during the crucial months of April and May of 1931, banks competed for limited liquidity. In this context, it is somewhat misleading to depict the Banco de España as having followed Bagehot's prescription. It lent as much as it could, but it only raised its interest rates when the banking, currency and stock market crisis had been going on for three months.

Second, as opposed to the money market that Bagehot described, the Spanish money market was much more underdeveloped. In short, there was no liquid interbank market for commercial bills of exchange, which is what the BdE had to purchase in 1931 when banks accessed the discount window. Looking at which banks discounted their commercial portfolio at the discount window during the crisis, reveals that these were the same banks that discounted it before the crisis. For long now, there has been an ongoing debate on the extent to which the identity of borrowers mattered more than the securities they brought to the discount window of the Bank of England. On the one hand, some have argued that the window was made of "frosted glass and raised just a few inches", meaning that the Bank only relied on bills' quality to rediscount them, regardless of who brought them. On the other hand, others argue that the window was transparent, so the identity of the discounter mattered, but that even in that case, the Bank clerk scrutinized both the discounter *and* the collateral with a warily "raised eyebrow" (Capie, 2002; Flandreau and Ugolini, 2013; Anson, Bholat, Kang, Rieder, and Thomas, 2018). My findings support the idea that the discount window of the Banco de España was also made of very transparent glass, but located in a room with no windows. While the BdE was aware at all times who was coming to the discount window, contemporary observers were completely unaware of what type of bills were accepted for rediscount, a criteria that seems to have been also ignored by some banks. Lacking a system of screening bills of exchange before they reached the discount window of the BdE, like the one Flandreau and Ugolini

(2013) document for Britain, and that is necessary to contextualize Bagehot's *Lombard Street*, the BdE provided liquidity through the outright purchase of bills only to its frequent *clients*. The rest of banks used public debt, which the BdE did not purchase, but accepted as collateral for short term credit. The problem with this differential access to the discount window emerged when the price of public debt collapsed after the proclamation of the Second Spanish Republic, as rumours of default on previously issued debts appeared. These nuances are not trivial, because they contribute to clarify the puzzle outlined in the very first lines of the introduction: why, if the Banco de España could lend "freely" and if exchange rate depreciation did not have any negative effects on banks, did Spain witness a sharp contraction in bank lending and economic activity in 1931? The answer is that neither could the BdE lend freely, nor were banks immune to exchange rate depreciation.

Accordingly, my findings also suggest that the idea put forward by some of the most influential works in the literature of the Great Depression that the Banco de España could lend freely as Bagehot had advocated overlooks the importance of the limitations faced by monetary authorities in emerging markets during financial crises[312]. In short, and as opposed to core, developed economies, emerging markets suffer from what economists dubbed as the "original sin": they can't borrow long term in their own currency and therefore they end up holding short-term liabilities denominated in foreign exchange, which they can not issue. In the absence of extensive *and* readily available foreign exchange reserves or timely currency swaps (as those provided by the Fed during the recent financial crisis), emerging market monetary authorities are severely limited in the room they have to respond to crises. This is particularly the case if these mismatches weight on bank balance sheets. My work thus joins other recent developments in financial history that highlight the importance of the currency-denomination of bank liabilities, such as Schnabel (2004a,b) and Macher (2017, 2018). While these authors provided evidence from the Central European economies that operated gold-convertible currencies, my work reveals that similar limitations were also in place in Spain, where a non gold-convertible currency was operated.

Consequently, this thesis is in line with recent developments in the macro-finance literature that suggest that emerging markets do not face a macroeconomic trilemma, but that their policy options boil down to a dilemma. As international capital flows revert, as was the case from 1928, emerging economies,

regardless of their exchange rate regime, have to choose between capital mobility and monetary autonomy (Farhi and Werning, 2014; Rey, 2015). If this coincides with a domestic run on banks, as was the case in Spain in 1931, then this implies that the only way of dealing with the crisis is to impose capital controls–and, lacking reserves, seek international assistance. This findings are in contrast with the widely held idea that a flexible exchange rate is enough to provide policymakers with monetary autonomy to respond to monetary, but also real shocks.

6.3 Implications for the Spanish historiography

The Second Spanish Republic was cut short by the Civil War that started in July 1936. While this thesis does not aim at the gigantic task of addressing the economic or social causes of the war directly, I argue that some of the findings can be relevant for this lively historiography as well. Most accounts of the performance of the financial sector during the 1930s in Spain, tend to discard any of the potential implications it could have had in Spain's descent to the Civil War[313]. Again, while retaining the necessary level of prudence in dealing with such a complex topic, the findings of this thesis suggest that this is probably not the case. The picture of the banking crisis that emerged from the data sources used in the 1980s and 90s—and that has been the main account incorporated by the international historiography–relied mostly on aggregate data on balance sheets that did not reflect the actual depth of the crisis and the actual fragility of the banking sector during the 1930s. Intact bank capital, intact portfolios of securities and somewhat lower but still healthy profits pushed pushed to the conclusion that 1931 was not a deep banking crisis. Having unearthed a number of previously unused archival sources, this thesis has provided an alternative explanation.

I have argued and provided evidence that banks underwent liquidity pressure and that this liquidity pressure predicts their lending behaviour during and after the crisis. During the crucial months of April and May 1931, when the Spanish Republic was still taking its first steps, the Spanish banking system as a whole suffered a liquidity shortage; bank-level information confirms this. Perhaps more importantly, banks that did not suffer a run on their deposits or banks that borrowed enough liquidity from the discount window of the Banco de España, did not contract lending significantly during the 1930s. Despite the undeniable implications of the political change for some sectors of society, demand for credit

was there; industrialists, merchants and the public in general demanded credit, but monetary authorities faced constraints and could not inject enough liquidity. The experience of some banks, like Banco Urquijo de Madrid or Banco de Bilbao confirms this and is, in turn, in contrast with the description provided by some of the previous accounts of the crisis. These banks accessed significant amounts of emergency liquidity and managed to keep their loan portfolio afloat.

My findings also shed light on previously undocumented events that have important implications for the connections between the 1931 financial crisis and the Civil War. I have shown that right after the proclamation of the Republic on 14 April 1931, Banco Urquijo de Madrid, known at the time as "the bank of the Society of Jesus", suffered a 50% drop in its deposits. There is evidence in my findings that strongly suggests that these funds were withdrawn by the Society, as it feared expropriation. This explains why some months later, the Minister of Finance made it illegal for banks to liquidate any assets pertaining to religious institutions. These findings are relevant, because a continuous religious conflict plagued the 1930s in Spain. The evidence this thesis provides helps understand the importance of economic factors in this conflict, which is, as I have argued above, commonly dismissed in the historiography of the period. My thesis also shows that there was a very loud silence about the case of this bank. It is impossible to learn about what happened to the bank if one does not look into its balance sheet or the operations it conducted at the discount window of the Banco de España. Its minutes, during the very days in which it was losing half of its deposits, talk about everything but what was actually taking place. This is not surprising. These were not very inviting times to write everything in one's minutes; bank inspections took place (as they had in the late 1920s) and capital flight, to which banks had to be instrumental almost by construction, was among the Minister of Finance's main concerns. All banks welcomed and aligned with the newborn regime in their minutes, but it is important to remember that they did so, in some cases, at the same time that they were hemorrhaging deposits. The informative value of banking developments in Spain during the 1930s has to be found in balance sheets and central bank operations, as written word was likely to be, in most cases, pure rhetoric.

Just as words contained in banks' minutes and annual reports during this period need to be taken with several pinches of salt, their balance sheets are also not necessarily reflecting the true situation they faced. My findings show

that the suspension of mark-to-market accounting in 1931, while crucial to avoid widespread and important bank failures as the ones experienced by Germany, Austria or the United States, masked the depth of the crisis. Bank capital and portfolios of shares and bonds do not reflect banks' actual situation. They mask deep solvency problems caused by the collapse in asset prices. That banks continued to pay dividends and taxes and they did not fail should not be taken as the proof that Spain escaped the Great Depression. It should instead be read as the way in which Spain masked the actual scope of its own Depression. This should then push us to ask what the implications are of this paradoxical, but ultimately false sense of prosperity reflected in bank balance sheets for explaining the evolution of the Spanish economy in the years before the Civil War.

To this end, this thesis has provided an explanation for the puzzle described in the introduction. My findings provide enough evidence to motivate a reassessment of the connections between the economic shocks that the Spanish economy suffered during the Great Depression and their relation with the political instability that preceded the Spanish Civil War. To be sure, prudence and historical rigor ask for not drawing fast conclusions about the connections between the shocks I described, or more broadly, the Great Depression and the Spanish Civil War. This applies to both sides of the argument: to denying any connections or to emphasizing too simple ones. The two episodes are very close, and only a few years separate the late 1920s from the 18 July 1936, when the war started. This short term imposed by historical developments, however, carries also a big risk of compressing history. The good news for the economic historian is that there is still much room for improving what we know about these crucial years in Spanish economic, monetary and financial history.

6.4 Limitations and further steps for research

If this thesis is useful to motivate a deepening in the research on the connections between economic shocks and the Spanish Civil War, it is in turn limited by the effects the Civil War and four decades of political and intellectual repression had on crucial archival sources. Only a few bank archives have survived and systematic data is not easy to find. This implies that, despite the efforts I have done in collecting as much evidence from as many bank archives I could visit during the time it took me to write this thesis, a lot remains to be done and a lot will prob-

ably remain unknown forever. There are, in my view three important avenues that further research should take in order to deepen and hopefully strengthen this body of research.

First, we need to know more about foreign depositors. There is anecdotal evidence that some banks suffered substantial deposit withdrawals from foreign depositors. My thesis relies partially on the assumption that the bulk of the deposit withdrawal was caused by domestic hoarding. While this is consistent with evidence from contemporary observers, it is not final. Finding out that the deposit loss that banks suffered was caused by foreigners and not mainly by domestic depositors would not impair my argument. Both agents had very similar–if admittedly not identical–incentives to dump their pesetas in foreign exchange markets, as recent episodes in emerging markets show (Argentina's exchange rate history since the 2000s is an example). It would, however, have implications to my conclusions about the social profile of the depositors that run on banks and, in turn, this would have then implications for the interpretation that policymakers made of the crisis at the time. Therefore, we need to know more about these exact proportions. The rich data that I have collected tells us how much deposits in banks were held in foreign exchange, which are the crucial part of the "twin crisis" explanation I provide, but they do not tell us who held them.

Second, but related to the first, deeper research on individual bank idyosincrasies during the crisis is crucial. I have documented the shocking case of Banco Urquijo de Madrid, the interesting failure of Bauer & Cia, the internal discussion of banks at the Consejo Superior Bancario and the case of the three banks in Catalonia that suspended payments in 1931. Still, we need more bank-specific stories that focus on 1931, to understand the extent to which exact proportion of their contraction in lending was due to liquidity shortages. Being able to attach weights to the argument provided by Gabriel Tortella and Jordi Palafox in 1984 and to the argument I provided here is important to draw the counterfactual–somehow ironic, given my discussion in the introduction–of how would have Spain fared if it had enjoyed currency stability during the 1931 crisis. Similarly, in order to be able to enrich the counterfactual analysis about bank failures I conducted in Chapter 5, we need to know the exact composition of banks portfolios of securities, to be able to price them at the share/bond level. This is only possible if we can dig deeper in bank archives, in their daily operations and go beyond their

written minutes or annual reports.

Finally, there is an extremely interesting and promising research agenda that needs to be undertaken, and this is the regional dimension of banking during the 1920s and 1930s in Spain. The destruction of the daily operations of the branches of the Banco de España during the 1960s has somewhat limited the depth of my analysis, as I acknowledged in Chapter 3. However, my research has exploited regional variation when possible, showing that the 1931 crisis exhibited interesting regional patterns. That said, if we are to deepen our research into the connections between the economic shocks of the late 1920s and the early 1930s and further developments in Spanish history, we need to extend the analysis to incorporate regional dynamics. It is to this and other ends that I expect to devote my future research efforts.

Archival sources

These are the archival sources used in the thesis. They are divided by the archive from they were collected. Finally, I outline online and digitized sources. For more details, see text and footnotes.

- **Archivo Histórico del Banco de España**
  - Actas de la Comisión de Operaciones del Banco de España (L.12106, L.12107)
  - Actas del Consejo de Gobierno del Banco de España (L.27159)
  - Liquidez Bancaria, Servicio de Estudios del Banco de España (D.6505)
  - Boletines del Consejo Superior Bancario, Tomo I (1924-29), Tomo II (1930-36) (1/1/3/1)
  - Actas del Consejo Superior Bancario, Vols. I-II (1922-28), III (1928-31), IV (1931-32), V (1932-35) (L.109572, 109573, 109574, 109575)
  - Estatutos del Banco de España
  - Regimen de las Sucursales y otras dependencias del Banco de España (various years)
- **Archivo Histórico del BBVA**
  - Libro de Actas de la Junta de Gobierno del Banco de Bilbao (various years)
  - Libro de Actas del Consejo del Banco de Vizcaya (various years)
  - Memoria-Balance de las Sucursales del Banco de Bilbao (various years and branches)

- **Archivo Histórico del Banco de Santander**
  - Banco Comercial de Barcelona, Libros Mayores 9-10 (L.6797,L.6798)
  - Banca Tusquets, Libro Mayor 9 (L.284)
  - Banco Soler y Torra, Libro Mayor 11 (L.1256)
  - Banco Central, Libros de Actas de la Comision Permanente (L.2,3,4,5)
  - Banco Central, Actas de la Comision de Operaciones
  - Banco Hispano Americano, Inventarios (L.6217)
  - Banco Hispano Americano, Revista Mensual, Año III, May 1931
  - Banco Hispano Americano, Anuario (1930)
- **Archivo Histórico del Banco de Sabadell**
  - Actas de la Comision Delegada del Consejo de Administracion del Banco Urquijo (L.4)
- **Archivo Histórico de la Bolsa de Madrid**
  - Anuario Garciceballos
  - Anuario Financiero del Banco de Vizcaya
  - Boletines de Cotizacion de la Bolsa de Madrid
- **The Rothschild Archive (London)**
  - Letter from De Rothschild Frères and Bauer y Compañía, 25/03/1931 (111/459)
- **The BIS Archives**
  - Letter from BIS Vice-President Leon Fraser to BdE Governor Federico Carlos Bas y Vasallo, 30/12/1930 (BISA, 2.81)
- **The Bank of England Archives**
  - Relations between Bank of Spain and Bank of England (OV61/25,26)
- **Banque de France Archives**
  - La crise economique, financiere et politique en Espagne. La situation monetarie et le credit de la Banque de France a la Banque d'Espagne
- **Online sources**

- Anuario Historico del Instituto Nacional de Estadistica (various years)
- Financial Times Historical Archive
- Hemeroteca de la Biblioteca Nacional de España
- Diarios de Sesiones, Serie Historica, Congreso de los Diputados (various years)
- Gaceta de Madrid (various years)

Endnotes

Notes

[1]Rothschild Historical Archive, 111/459.

[2]Martín-Aceña's work also included some insights from the unpublished work of the late Pedro Martínez-Mendez, an economist at the Research Department of the Banco de España who sadly passed away in the process of elaborating a monograph about the Banco de España during the first third of the 20th century and that was supported by a monumental wealth of archival research that he had been undertaking for a long time. This source, from where I also draw from in some instances in the present thesis, has been and will probably continue to be of great benefit for a number of Spanish economic historians interested in the period (Martínez Mendez, 2005).

[3]Hernández Andreu (1983, p.303 et passim).

[4]Tortella and Palafox (1984, p.105).

[5]Tortella and Palafox (1984, p.105-107).

[6]Palafox (1991, p.191).

[7]This is in contrast with Martín-Aceña (1984) who, as I discussed above, considered that monetary policy conducted by the BdE was not accommodative enough during the period.

[8]García Ruiz (1993, p.617).

[9]Prados de la Escosura (2017, p.19).

[10]See, for example, Gourio, Kashyap, and Sim (2018)

[11]García Ruiz (1993, p.617).

[12]For a discussion on how dummy variables can fail to capture structural differences among cross-sections, see Flandreau and Zumer (2004) critique on the use of dummy variables for gold-standard countries in Bordo and Kydland (1995); Bordo and Rockoff (1996). Similarly, Accominotti, Flandreau, Rezzik, and Zumer (2010); Accominotti, Flandreau, and Rezzik (2011) question the use of dummy variables by Ferguson and Schularick (2006) to estimate spreads in borrowing costs for members of the British Empire.

[13]See Appendix 3 in Reinhart and Rogoff (2009, p.383), which draws from Bernanke and James (1991), Bordo et al. (2001) and Temin (2008).

[14]Choudhri and Kochin (1980, p.566).

[15]Temin (1993, p.97).

[16]Banco Vasco also suspended payments in 1925. Bernanke and James (1991) time the failure of the bank in September 1925, but the bank failed in February 1925 (Alonso Olea, 2012).

[17]Since the data I use does not disaggregate by branch, I attribute all the balance sheet to the province in which a bank had its headquarters. This increases the size of the crisis in Madrid

at the expense of other provinces, but does not change the overall picture that compares 1925 with 1931.

[18]See Tables 4 and 5 in Grossman (1994).

[19]Temin (2008, p.6).

[20]Grossman (1994, p.678).

[21]In his article, Grossman discusses briefly the case of Finland and argues that ideally (alongside Spain) it should have been better placed in a third category because it is a *"somewhat ambiguous case. There was a reduction in the number of banks between 1929 and 1933; however, the Economist, in its regular reports on Finland, makes practically no mention of the banking situation"* (Grossman, 1994, p.679-680).

[22]See Ferguson and Temin (2003); Schnabel (2004a); Ferguson (2004); Schnabel (2004b) and Temin (2008) for a discussion on the extent to which the German crisis of 1931 should look at the connections between banking and currency problems.

[23]This move–which has been studied before as a case of indirect monetization of public debt (Sabaté et al., 2006, 2015)–was not dissimilar to the experience of the United States after WWI, in which several bonds were issued under conditions that made them eligible at the discount window of the Fed at rates below their nominal yield (Meltzer, 2003).

[24]*Estatutos del Banco de España (1902).*

[25]*Spain: questionnaire*, Bank of England Historical Archive (OV61/25).

[26](Martín-Aceña, 1985, p.17).

[27]See, for instance, Sardà and Beltran (1933); Cabana (1965, 1978, 2003, 2007)

[28]Before this new detailed account of the crisis, scholars suggested that the failure was caused by the inaction of the BdE. For example, in line with contemporary accounts provided by Sardà and Beltran (1933), Cabana (1965, 1978, 2003, 2007) concluded that the bank was allowed to fail because of private business interests of the BdE and other Spanish banks in expanding their market shares in Catalonia. According to this view, the failure of the Banc de Barcelona came as the ideal opportunity to increase market shares for other "non-Catalan" banks and for the Banco de España, which marked the beginning of the decline of "Catalan banking institutions". Martín-Aceña (2013) provides a brief summary of the opposite view, albeit does not include the more recent research produced by Blasco and Sudrià (2016).

[29]Cambó (1991, p.720 *et passim*).

[30]Cambó (1991, p.727).

[31]*Diario de Sesiones, Serie Historica, Congreso de los Diputados, Numero 80, 26/10/1921, p.3777 et passim.*

[32]After the suspension of payments in December 1920, the first months of 1921 produced no news about the situation of the bank. In February, the Annual Shareholder Meeting took place and a Comission that represented the bank's shareholders was formed. In May, the Comission discussed to create a new bank, while individual, smaller shareholders asked the Spanish Government to intervene by accusing the Board of the Banc de Barcelona of fraud (selling their shares when they knew the bank was going to fail). In July, without a clear explanation of the reasons behind the collapse of the bank, an Association of Creditors of the Banc de Barcelona was formed in order to find out the actual accounting situation of the bank and determine the value of its remaining assets. It was not until 1923 that the Banc was officially declared under Payments Suspension, and in 1924 its remaining assets and liabilities were added to the newly founded Banco Comercial de Barcelona (BCBA) (Blasco and Sudrià,

2016).

[33]Mr. Cambó himself claimed that *"(...) our private banks are undergoing times of fragility and, thanks to this, Spain has suffered an invasion of foreign banks (...) I have never been an enemy of foreign collaboration in the form of capital or foreign culture; however, I understand that we can only be open to such collaboration without being in danger if, by action of the State or private initiative, we intensify our internal strength, so foreigners come to Spain as to collaborate with us and not to dominate us. (...) I noticed foreign banks' concerns over the new law. They came to me and talked to me about it! I told them: in Spain, the same law for everybody. We have today a taxation legislation that, with respect to foreign banks–I say it here as I said it to them–that establishes precepts of excessive rigour, that could be unfair, and I am ready to ask the Parliament to attenuate them; however, everything that has to do with protection, help or State assistance, this is only going to be available for Spanish banks. I will not step back in this point, and I told them this and their main supporters. I told them even more: only Spain, when private banks reach enough strength, will be able to provide an equal treatment to foreign banks, (...) it is in your own interest that the Spanish banking sector strengthens, as the more strong our system will be, the more generous and liberal will be the legal regime that Spanish governments will concede to you."* (Cambó, 1991, p.739).

[34]In response to a question raised by Mr. Pedregal, Mr. Cambó replied: "[Mr. Pedregal] *held that I should not be concerned, when drafting the law, with the "statu quo"; that I shall not attend the imperative reality that the issuing monopoly rights would expire on the 31st of December and that the Government could or could not extend it for some time. I would like to reply that this statement is not supported in real facts. (...) it is obvious that if the monopoly rights had to be extended, I had to do it before the 1st of December; because it would have been no only risky, but foolish, to think that between the 1st and the 31st of December we could have nationalized the issuing of currency by creating a section within the Treasury or a private bank that would take over the issuing of notes, the branch network or the organization of credit in the country. Moreover, who would have bought the gold from the BdE? I assume that it would have been bought at today's market value. And then I suppose that the BdE could have not dreamed about a better business than selling all its gold at current prices. There was no freedom; we needed to continue with the monopoly of issuing of the BdE."* (Cambó, 1991, p.737).

[35]*Diario de Sesiones, Serie Histórica, Congreso de los Diputados, Numero 80, 26/10/1921, p.3776 et passim.*

[36]*Diario de Sesiones, Serie Histórica, Congreso de los Diputados, Numero 80, 26/10/1921, p.3778 et passim.*

[37]As Mr Cambó put it: *"(...) I was warned that it was more convenient to establish a ratio between the note and its guarantee and, that the needs of the national economy would then determine the quantities. (...) I understood that a limit had to be put in place. First, when the limit is reached and needs to be increased, there is a negotiation between the Banco and the Government, and in the past, the Government has always obtained something from this negotiation."* (*Diario de Sesiones, Serie Histórica, Congreso de los Diputados, Numero 80, 26/10/1921, p.3780 et passim.*). As Broz and Grossman (2004) discussed for the case of the renewal of the Bank of England charters between 1694 and the concession of the monopoly of issuance in 1844, negotiations were influenced by the fact that all sides were "contracting under uncertainty". The Spanish case bears similarities. In fact, this uncertainty explains why Cambó, as reflected by the quote above, decided to keep open the option for renegotiating

the charter every time the fiduciary limit had to be expanded, even if this happened before the expiration of the monopoly of issuing. Interestingly, as I discuss in Chapter 3, the first time the limit had to be raised after 1921 was in the middle of the 1931 crisis. This being an emergency measure, left little room for deliberate negotiation between the Government and the BdE during the crisis. In fact, a revision of the charter was introduced, however, in November 1931, once pressure on the exchange rate had eased. The new law increased the State presence and control over the BdE. As Sala (2015b) documented. what Prieto tried in November 1931 was to take the first step to nationalize the BdE, something that was done in 1962. The reform contained, essentially five points. First, the BdE could lend to the government a maximum of 12% of the latter's budgeted expenses, up from the previous 10%. Second, profits and losses from exchange rate interventions would be shared, regardless of the BdE's willingness to join the intervention. Third, establishment of a progressive tax on BdE "excessive profits". Fourth: introduction of different valuation scenarios for the BdE gold reserve if a gold standard was to be implemented in Spain. Fifth (and perhaps more important): the number of members appointed by the Government in the BdE board would increase from one to three.

[38]In fact, as I discuss in Chapter 3, this became the cornerstone of the economic policy of the Primo de Rivera Dictatorship from 1926.

[39]*Diario de Sesiones, Serie Histórica, Congreso de los Diputados, Numero 80, 26/10/1921, p.3785 et passim.*

[40]Cambó left the Government in August 1922.

[41]*Articulo 1, Seccion 7, Ley de Ordenacion Bancaria*, (Ministerio de Hacienda, 1921).

[42]Moreover, since the BdE valued its gold reserves at the 1868 parity, its profits were relatively isolated from a falling peseta.

[43]In 1918, a similar Law was drafted, which included a reduction in the discount rate to banks and bankers, while the Lombard rate would be decided by the BdE and needed the approval of the Government. The BdE opposed this law, not for it tried to make the reductions in the discount rate compulsory, but because other parts of the law, mainly those referring to a tax on fiduciary issuing and having to sell its the securities that yielded profits (Paret, 1921).

[44]*"(...) it had been tried before to impose to the BdE a regime of bonuses when discounting to other banks; however, this was a voluntary arrangement, and I understood that this had to be made preceptive in the law I am presenting (...)". Diario de Sesiones, Serie Historica, Congreso de los Diputados, Numero 80, 26/10/1921, p.3787 et passim.*

[45]*Estatutos del Banco de España, 1902.*

[46]See, for example, in Chapter 4, the extreme case of the 1931 crisis, when the composition of the pool of discounters at the discount window of the BdE in Madrid did not change at all.

[47]*Diario de Sesiones, Serie Historica, Congreso de los Diputados, Apendice 2 al Numero 102, 06/12/1921, p.1..*

[48]*Diario de Sesiones, Serie Historica, Congreso de los Diputados, Apendice 2, Num. 102, 06/12/1921, p.1.* and Ministerio de Hacienda (1921).

[49]Mr. Cambó referred to the problem with the law being vulnerable to time-inconsistencies derived from the specific fiscal needs of future governments: *"(...) such a delicate and momentous machine as the discount rate, should only be moved by purely economic needs, never mixed with any fiscal consideration. Mixing fiscal considerations with the discount rate is the most dangerous combination that can be put in place for issuing banks."*(*Diario de Sesiones, Serie Historica, Congreso de los Diputados, Numero 80, 26/10/1921, p.3782 et passim.*)

[50]Liquidity requirements and proportionality rules can be found at *Actas del Consejo Superior Bancario, Libro de Actas N.1, Acta de 22 de Septiembre de 1924, p.181-182.*

[51]It also included a share of long term loans which comprised already paid coupons for long term loans, however, with the data at hand it is not possible to disentangle this part, so I leave all long term lending out of the liquidity ratio.

[52]*Actas del Consejo Superior Bancario, Libro de Actas N.1, Acta de 12 de Julio de 1923, p.108-109.*

[53]Clearing banks in Britain, during the same period, held 'true' capital ratios of less than 10% (Billings and Capie, 2011). Between 1920 and 1926, New York banks had capital ratios of around 15% on average, whereas this increased after 1926, to average around 25% during 1927-1930, and fell substantially during the several banking crises that the USA experienced (Calomiris and Wilson, 2004). For Germany, Schnabel (2004a) shows that for before the 1931 crisis, equity ratios were between 10 and 15%. French banks held an average of 15% capital ratio in 1913, but by 1928 it had plummeted to 4.1% (Lescure, 1995). Viennese banks held capital ratios of between 10 and 15% during the 1920s (Weber, 1995), Austrian universal banks held ratios of around 10% while for Austrian *Sparkassen* the ratios were below 5% (Macher, 2018). Hungarian banks had equity ratios of 13-18% during the second half of the 1920s (Macher, 2018). Portuguese banks held capital ratios between 8 and 10% during 1920-1930 (Reis, 1995).

[54]Both liquidity and capital ratios are statistically significantly lower for CSB members, compared to non members.

[55]*Actas del Consejo Superior Bancario, Libro de Actas N.2, Acta de 28 de Septiembre de 1926, p.166-176.* This regulation was extended to all banks in 1926, so non-CSB members could also not underprice the BdE *Gaceta de Madrid, N.146, 26/05/1926, p.1116 et passim.*

[56]Balparda was member and founder of "Liga de Accion Monarquica", a liberal party in the Basque country.

[57]*Diario de Sesiones, Serie Historica, Congreso de los Diputados, Numero 103, 7/12/1921, p.4679 et passim.*

[58]*Diario de Sesiones, Serie Historica, Congreso de los Diputados, Numero 103, 7/12/1921, p.4679 et passim.*

[59]*Diario de Sesiones, Serie Historica, Congreso de los Diputados, Numero 96, 24/11/1921, p.4369 et passim.*

[60]Paret (1921, p.116,138-143).

[61]Olariaga (1946).

[62]Sabaté et al. (2006) estimate fiscal dominance using the monetary base. However, given that the channel of monetization of public debt is the banking system, it seems perhaps more appropriate to use M1 or M2, because it is precisely the difference between the two measures of money what makes the Spanish case different from a "direct" monetization scheme.

[63]*Regimen de Sucursales (1896), Capitulo IV, De los prestamos y de los creditos con garantia de efectos publicos, Art. 59*, p.87 *et passim.*

[64]*Regimen de las Sucursales del Banco de España (1916), Capitulo XI, De los prestamos con garantia de efectos publicos, Art. 127*, p.141 *et passim.*

[65]*Instrucciones para el Regimen de las Sucursales y otras dependencias del Banco de España (1932), Capitulo XII, De los prestamos con garantia de valores, Art. 240*, p.213 *et passim.*

[66]An occasional deviation from the norm took place in 1917, when the Government had to issue debt as it was unable to get the budget approved by the Parliament. According

to Pedrós Abelló (1978), this deviation marked the beginning of the change in the lending practices of the BdE. However, as Figure 2.9 shows, while it might have shown the way to the Government, this lending practice was only fully embraced by the BdE once, after the 1921 Banking Law was passed, the latter was forced to interact with a much numerous and large pool of counterparties.

[67]Comisión del Patrón Oro (1929, p.61)

[68]Comisión del Patrón Oro (1929, p.87)

[69]For a detailed account on these policies see Chapter 3 of this thesis or Martín-Aceña (1984) and Martínez-Ruiz and Nogués-Marco (2014).

[70]Foreign banks also played a role, as they had directly subscribed around 13% of the issued bonds.

[71]The variable $crisis_t$ takes value 1 for banks that suffered a drop of more than 5% in their deposits during either 1931q2 or 1931q3 and zero otherwise. This tries to disentangle the contraction in credit that was due to the negative liquidity shock that some banks suffered from the effect of the rate hike from the one that came from the loss of deposits. As (Jorge-Sotelo, 2019) shows, banks that did not suffer a shock to their liabilities during 1931 did not cut lending substantially.

[72]GMM estimation can lead to highly significant coefficients due to the fact that the number of instruments used in the estimation increases exponentially as more lags of the dependent variable are included as instruments Roodman (2009b). I provide information about the number of instruments in each regression and follow Roodman (2009a) in using a number of instruments lower than the number of groups.

[73]The model is estimated in first differences. The differences of the lagged dependent variable (four lags) are instrumented by its further lags, from the fifth to the eight. Independent variables (endogenous) that capture the business cycle and macroeconomic conditions (GDP, CPI inflation, stock market and exchange rate) are instrumented by themselves. The monetary policy indicator and foreign central banks' rates are considered exogenous to loan supply.

[74]For example, for the balance sheets that comprise the eight quarters from 1931 and 1932 were published in September 1934, or those containing the four quarters of 1934 were published in April 1936.

[75]*Reglamento del Consejo Superior Bancario, Gaceta de Madrid*, 16, June 1922.

[76]*Actas del Consejo Superior Bancario, 15 May 1928.*

[77]Coefficients are, in absolute values, never larger than 0.06.

[78]Since Albers (2018) only starts in 1925, I interpolate annual data from Prados de la Escosura (2003) with the industrial production index for 1922-1925, although this data does not enter the final regressions.

[79]See Albers (2018, p.6-11) for a detailed discussion on the advantages of a broader index as opposed to the industrial production index. In the case of Spain, particularly in the second quarter of 1931, the industrial production index spikes to its highest level. Using this would be certainly misleading, since the spike comes from the sharp increase observed in May 1931, a month in which economic climate in Spain was certainly not improving.

[80]See Kashyap and Stein (1995, 2000); Angeloni et al. (2003); Ehrmann et al. (2003).

[81]All bank characteristics' measures are normalized against their average across all banks over the whole period. Size is also normalized over each period, in order to avoid the trend effects that arise because measures are done in nominal terms, following Ehrmann et al. (2003)

and Gambacorta and Marques-Ibañez (2011) (see Appendix)

[82] *Liquidez bancaria.* Servicio de Estudios, Banco de España, 1935. D.6505 (AHBDE).

[83] The estimated elasticities are within the range of those found in the literature. Table 2.6 reports these results. In general, my findings are in line with recent scholarship that suggests that the main determinant in the transmission of monetary policy is liquidity, while size and capital ratios play, at best, secondary roles.

[84] Arellano Bond Tests for autocorrelation of first and second order are reported (second order autocorrelation is ruled out), as well as Sargan and Hansen tests for instrument validity. While in all regressions the Sargan does not confirm correct over-identification, it is because it is not robust to heteroskedasticity and autocorrelation. However, the Hansen test, which is robust, is also reported and shows that all models are correctly specified and instruments are valid (Roodman, 2009b).

[85] It is not surprising that for non member banks the rediscount rate had a larger effect than the Lombard rate (Columns 1 and 2). Although data on specific interbank borrowing between non-member banks and CSB member banks does not exist, it is plausible to think that, when in need of liquidity, non member banks could always borrow from CSB banks using public debt as collateral, but not by selling bills of exchange. It could thus be that large and well-diversified CSB banks borrowed more intensively from the BdE and then lend to non-member banks through interbank loans (Ehrmann and Worms, 2004).

[86] In line with Equation 2.8 in the Appendix, banks' funding costs depended negatively on a health signal, which apply a risk premium to the interbank market rate. Results in Columns 5 and 6 of Table 2.4 and Columns 4 to 6 in Table 2.5 which show non-member banks reaction to changes in the Lombard rate and yield of public debt reflect this risk or "health" premium.

[87] See the discussion of rate changes in the Appendix.

[88] In this section, I follow the derivation and explanation of the model as in Ehrmann et al. (2003), with comments specific to the case under study in this paper.

[89] The first relation, which is presented in Equation 2.4, holds for this case only to a certain extent, as banks had could hold a credit portfolio of ten times their equity. Although the definition of equity was blurred by the fact that it included non-disbursed capital and holdings of own stocks as part of the reserve requirement (Artola-Blanco, 2016), there is a positive relation between the two measures. With respect to deposits and securities, the relation is much clear. A simple panel regression for the whole sample of banks provides an estimate of coefficient k in Equation 2.5 of 0.21, significant at the 1% level, with an overall R-Squared of 0.54. Coefficient s in Equation 2.5 is estimated at 0.69, significant at the 1% level and with an R-Squared of 0.98.

[90] The final econometric model accounts for fixed effects that are expected to control for the effect of these characteristics.

[91] Angeloni et al. (2003) deal with this problem by including bank-specific loan-demand proxies that allow for differences among banks, which is a more precise but still similar solution to what I propose. Unfortunately, I lack the data needed to conduct their approach.

[92] *Actas del Consejo Superior Bancario, 15 May 1928.*

[93] *Actas del Consejo Superior Bancario, 27 July 1928.*

[94] *El Sol*, 15 December 1928, p.7.

[95] *Actas del Consejo de Gobierno del Banco de España, Sesion Extraordinaria*, 18 December 1928.

[96]Martín-Aceña (1984, p.136).

[97]*Actas de la Comisión Delegada del Consejo de Administracion del Banco Urquijo, L.4, p.52*, 24 December 1928.

[98]*Memoria de la Sucursal de Barcelona,* Banco de Bilbao, 1928, p.1.

[99]There were rumours in the press that the rate change was not a final decision and that it could be raised again soon (*ABC, Edicion de la mañana,* 16 December 1928.). This was also an option taken into consideration by banks, as it is reflected in their reaction to the rate increase. For example, Banco Urquijo de Madrid (BUMA) *"discussed about the possibility of a further increase in more than half a percentage point"* and emphasized its strong opposition against *"any increase in the discount rate"* (*Actas de la Comisión Delegada del Consejo de Administracion del Banco Urquijo, L.4, p.52, 24* December 1928.).

[100]*Actas de la Comisión Delegada del Consejo de Administracion del Banco Urquijo, L.4, p.53-54,* 24 December 1928.

[101]*Actas del Consejo de Administracion del Banco de Vizcaya, L.8, p.59,* 28 December 1928.

[102]See Appendix of Chapter 4 for the elaboration of the market rate.

[103]With the exception of 1925, when the collapse of the Credito de la Union Minera, which caused a big withdrawal of deposits from the banking system, although mainly in the north of the country.

[104]*Memoria de la Sucursal de Madrid*, Banco de Bilbao, 1928, p.3-4.

[105]*Memoria de la Sucursal de Madrid,* Banco de Bilbao, 1928, p.3.

[106]*El Economista, 2291*, 26 October, 1930, p.617; quoted in Martín-Aceña (1984).

[107]*La Epoca*, Madrid, 19 December 1928, p.1.

[108]*Actas del Consejo de Gobierno del Banco de España,* L. 27158, p.155, 16 July 1930. and *La politica monetaria del Gobierno*, ABC, 25/11/1930, p.1.

[109]*Actas del Consejo de Gobierno del Banco de España,* L. 27158, p.156, 16 July 1930.

[110]The Finance Minister reached the BdE with a proposal of 0.75 percentage points increase, but when it imposed its criteria to enact the rate change, this was only done by 0.5 percentage points. Martín-Aceña (1984) provides a comprehensive and detailed explanation of the discussions that took place regarding the rate change in 1930.

[111]*Memoria de la Sucursal de Madrid,* Banco de Bilbao, 1930, p.4.

[112]*Actas de la Comisión de Operaciones del Banco de España* L.12107, p.174.

[113]*Publicaciones de El Financiero, La peseta en 1931,* p.77

[114]The proclamation of the Republic had also an almost immediate effect on the stock market, which is why some authors classify this crisis as triple, and not twin (Betrán et al., 2012). Considering its size, the stock market shock had a relatively small effect on most banks, as mark-to-market for shares and bonds (private and public) was suspended until December 1933, thus avoiding widespread bank insolvencies. I deal with the importance of the shock to the stock market and policy reaction in Jorge-Sotelo (2019).

[115]I explore the underlying reasons for the absence of widespread bank failures in Jorge-Sotelo (2019).

[116]I am not the first to question the traditional account. Martín-Aceña (1984) concluded that monetary policy in Spain during the 1930s was definitely not expansive, while García Ruiz (1992, 1993) suggested that this might have had an effect on the supply of credit after the 1931 crisis. As a matter of fact, Spain underwent a very severe economic contraction during the 1930s.

[117]The Minister of Finance of the Dictatorship, Jose Calvo Sotelo, considered the appreciation of the peseta in 1926-27 as the undeniable result of the "rhythm of progress and vigor that the dictatorship was imposing on Spain" (Calvo Sotelo, 1933). By December 1928, when the peseta was starting to fall rapidly, Calvo Sotelo claimed that *"the value of the peseta needs to be the expression of moral reality, present and future, and of racial capabilities, incompatible with a sharp depreciation of our currency"* (Cambó, 1991, p.335). By that time, the defense of the value of the peseta had become a matter of political prestige for the dictatorship (Tapia, 1998, p.16). The Minister, however, failed to understand power-purchasing-parity theory of exchange rate determination, something that was highlighted by the Comisión del Patrón Oro (1929). As Sardà (1936) observed, *"the Spanish government, undoubtedly pushed by political motivations, started the [unfruitful] intervention in the exchange rate in 1928"*, until the cost of this intervention was too large, interventions had to stop and Calvo Sotelo resigned. Several pieces of evidence supporting this thesis can be found on Eguidazu (1979), Tapia (1998), Martín-Aceña (1984) or Martínez-Ruiz and Nogués-Marco (2014). In particular, Tapia (1998) explains how Calvo Sotelo failed to understand power purchasing parity determination of exchange rates, and was convinced that the peseta could be stabilized at a level consistent with the *deserved* reputation of the country.

[118]A clear example of this is the report produced by the Comisión del Patrón Oro (1929), but there are other instances. For example, as late as 1933, there were internal discussions within the BdE about an eventual *de jure* peg to gold (Banco de España, 1933).

[119]In his visit to Madrid in June 1930, John Maynard Keynes held an interview with *El Sol* in which he claimed: *"Frankly, in a moment of international falling prices as the one we are going through now, in no way does the fall of the peseta seem to me synonymous with weakness. The freedom to allow a certain moderate looseness in the exchange rate, in times of general depression affecting the rest of the world, can be a valuable measure to maintain internal stability, which would otherwise be impossible to maintain"* (*El Sol*, 12/06/1930, p.1-4). The words "certain" and "moderate" are striking, considering that when Keynes visited Spain, the peseta had lost more than 40% of its value during the two previous years. Even more so because Dictator Primo de Rivera (and his Minister of Finance) had resigned in January, unable to tame the discredit of the Dictatorship, to which the fall of the peseta was one of the main contributing factors (Ben-Ami, 2012).

[120]For example, Tortella and Palafox (1984) concluded that *"(...) nothing massive or drastic occurred, no really important banks suspended payments; no large scale "salvaging operation" was required. (...) no drastic downturn occurred. (...) The banking system never had a liquidity problem* Following their account, Bernanke and James (1991) considered that Spain had a crisis in 1925 but not in 1931, because no important bank failed in 1931. The same is true for Grossman (1994), who does not include Spain in a list of countries experiencing crises during the 1930s. More recently, Reinhart and Rogoff (2009), summarized the traditional account by claiming: *"the country avoided the worst of the Great Depression by staying off the gold standard; it experienced runs, but the Bank of Spain could lend freely as a lender of last resort."*

[121]See for example, Martin (2009) for an argument about how flexible exchange rates eliminate all constraints to lender of last resort interventions. In contrast Ugolini (2017) highlights the fact that in the presence of fiscal limitations or political instability, flexible exchange rates are not a sufficient condition to allow for LLR interventions.

[122]In 1928, Calvo-Sotelo claimed that *"the value of the peseta needs to be the expression of moral reality, present and future, and of racial capabilities, incompatible with a sharp depreciation of our currency"* (Cambó, 1991, p.335).

[123]Citation taken from Pabón (2000, p.566).

[124]Calvo Sotelo (1933, p.186-187).

[125]This was perceived also abroad, as can be seen in the correspondence between the De Rothschild Freres and the Spanish bank Bauer y Cia, their correspondent in Spain. On 20 August 1930, Ignacio Bauer, the chair of the bank, wrote: "*It is hard to believe how much the question of the exchange rate weights in all aspects of Spanish politics."* (...) *"Mr. Arguelles* [the Minister of Finance] *has been replaced by Mr. Wais. I have nothing to say against the new Minister, on the contrary, he is intelligent, young and honest. His predecessor, however, had the same qualities, and despite all this, the exchange rate continued to worsen. Nowadays everything depends on the exchange rate."* (Rothschild Historical Archive, 111/459). The Financial Times also reported on the importance of the exchange rate for the resignation of Dictator Miguel Primo de Rivera: *"(...) it is probably correct to say that one of the causes which led to his resignation was (...) the weakness of, and obscurity in regard to, the exchange value of the national currency"* (Financial Times, 31/03/1930, p.31).

[126]*La Gaceta de Madrid, Num.339, 5 de Diciembre 1929, p.1474 et passim.*

[127]Until September 1931, virtually all subscribers of gold bonds asked to be paid interest in Sterling. After that, US Dollars and then French Francs replaced payments in Sterling (*"Manifestaciones del Ministro de Hacienda", Ahora, 26/09/1931, p.10).*

[128]From a total of 350 million pesetas-gold, the Government had drafted an allocation of 150 million for Spanish banks, 100 million for the BdE, and 100 for the public. However, the final allocation of gold-bonds differed from the initial draft, because foreign banks, members of the public and large firms demanded more than what they had been initially allocated (Table 3.8).

[129]Figures of bondholders are provided in Table 3.8. These are estimates provided by the press, but it is plausible that Spanish banks did actually buy more bonds, as their balance sheets show larger increases in foreign-currency denominated liabilities during the first quarter of 1930. It is also very possible that the category "Others" includes bonds bought by other, smaller banks. By 16 April 1931, two days after the proclamation of the Republic, the Financial Times reported that bonds had not changed hands (*"Rights of Spanish Sealed Bonds"*, 16/04/1931, page 1, Edition 13, 184.).

[130]Some contemporary accounts argue that the Primo de Rivera forced banks to subscribe the gold bonds. An example of this can be found on *Vida Economica, 30/06/1931, Año XX, Num. 775, p.231-232.* However, the fact that there was strong demand from the public and foreign banks casts doubt on this account.

[131]Between 1929 and 1930, customs revenues fell by 17%, while between 1929 and 1931, they fell by 28% (Comín and Diaz, 2005a).

[132]Foreign banks also played a role, as they had directly subscribed around 13% of the issued bonds (Table 3.8).

[133]The BdE had conducted a very similar operation in 1924/25 when the Credito de la Union Minera failed. The BdE extended liquidity at the branch where this bank was located, and there were very little, if any, effects on the rest of the system.

[134]*Acta de la Reunion Extraordinaria de la Comisión de Operaciones del Banco de España*, 17/04/1931.

[135]There are many examples of this. On 28 December 1928, after rising the discount rate, the Banco de España argued that its operations would involve only "purely commercial" bills (*Actas de la Comsion de Operaciones del Banco de España, Libro 12.101*). On 20 April 1931, during the bank run, BdE claimed that *"banks should operate mainly on commercial transactions (...) and should restrict the concession of credit through discount of financial bills"* (*Actas del Consejo de Gobierno del Banco de España, Libro 27.159, p.56).*

[136]The BdE dealt with increased counterparty risk by narrowing the elegibility criteria for bills. See (Jorge-Sotelo, 2019) for details.

[137]Section VII of Article I of the 1921 Banking Law stated that if the Government embarked in a specific action in the defense of the currency, if the BdE mediated in the intervention or if it intervened directly, half of the gold used with that end would be from the BdE's reserve (*Base Septima, Articulo I, Ley de Ordenación Bancaria, 27/12/1921*).

[138]One day after the proclamation of the Republic, the Vice-Governor of the BdE Pedro Pan, expressed the concerns about the Government using the Banco's gold to guarantee external credit operations to intervene in foreign exchange markets: *"if the Government was to guarantee the credit operations with gold, if these matured and the government did not honour its compromise, then the BdE would lose gold"* (*Acta Extraordinaria del Consejo Superior Bancario*, 15/04/1931, p.267.). This was so feared that the BdE and the banks discussed the extreme case in which, to avoid to pay debtors in gold from the BdE, the new Government might have to sell its Patrimony (*Acta Extraordinaria del Consejo Superior Bancario*, 15/04/1931, p.268).

[139]*Actas del Consejo de Gobierno del Banco de España*, 24/10/1930.

[140]In a meeting of the board of the CSB in October, the Secretary explained that the Banco de España was willing to contribute to support the currency, but that gold from the Banco should not be involved: "the operation should be done under more advantageous conditions, without using the Banco's gold as guarantee, because doing this, the same as moving its gold, fills the Banco with disgust" (*Acta de del Consejo Superior Bancario de 8 de Octubre de 1930*, p.194).

[141]Toniolo and Clement (2005, p.80).

[142]Toniolo and Clement (2005, p.81).

[143]Letter from BIS Vice-President Leon Fraser to BdE Governor Federico Carlos Bas y Vasallo, 30/12/1930. Bank for International Settlements Archive, *BISA 2.81, Bank of Spain, Policy.*

[144]Martín-Aceña (1984, p.201).

[145]JP Morgan canceled the credit on 17 April. Mendelsshon & Co. on 20 May. The BIS also cut its credit line and it was let to expire by the end of June. Officially, the credit was canceled by JP Morgan, and not by the Spanish Government. The reason for the cancellation of the credit, according to a letter that JP Morgan sent to the BdE, was the abandonment of a clear stabilization plan for the peseta, and not the composition of the government. This last statement is of course, difficult to prove, but JP Morgan also provided the BdE with a memorandum in which it explained which was the best way to stabilize the peseta. Interestingly it suggested using the discount rate and the gold reserve. In another letter, Mendelsshon & Co. mentioned that they had canceled the credit, partly because of the tensions in foreign exchange markets due to the Credit-Anstalt crisis, although they were not the main providers of the line of credit (Martín-Aceña, 1984).

[146]*Ley de Ordenación Bancaria, Gaceta de Madrid, 30/12/1921, p.364 et passim.*

[147]*Acta de la Sesion Extraordinaria del Consejo Superior Bancario*, 15/04/1931, p. 267 *et*

passim. and 05/05/1931, p.279-280.

[148]The two largest and most widely branched banks in Spain entered the discussion. Mr. Ramon Alvarez Valdes (BHAM) claimed that *"we just have to overcome the first 15 days"*. Note that BHAM did not experience liquidity pressure during April (Figure 3.3). The opposite was true for Mr. Pablo Garnica (BECR), who claimed that it had always been the case that when banks were in deer need of funds, it was the BdE who held the "ultimate reserve" and added that as long as the BdE was within the fiduciary limits, it should not be concerned over lending to banks at demand. Garnica's point is important because, on the following days, restricted by the fiduciary limits, the BdE injected 180 million pesetas, but Garnica's bank (BECR) did not borrow at all. Both Garnica (BECR) and Pan (BdE) agreed in that, whatever happened, they did not want the Government to know about specific banks' difficulties (*Acta de la Sesion Extraordinaria del Consejo Superior Bancario*, 15/04/1931, p.266.

[149]*Acta de la Sesion Extraordinaria del Consejo Superior Bancario*, 18/04/1931, p. 278 *et passim.*

[150]In fact, Mr. Prieto did not want to acknowledge receipt of the petition that he received on 18 April, and he asked banks to rewrite the petition with the date of 5 May, so he would not be liable for the delay in the authorization (*Acta de la Sesion Extraordinaria del Consejo Superior Bancario*, 05/05/1931, p.280).

[151]International observers commented on this problem. On 31 May, the Financial Times acknowledged the *"(...) exceptional demand for the Franc (...) to purchase against sales of the peseta by people withdrawing capital from Spain." ("Spain's money troubles", Financial Times, 01/06/1931, p.5).*

[152]*Gaceta de Madrid*, 07/05/1931, p.581 and 28/05/1931, p.974-975. Spain was the first country to impose such controls, in the last days of May 1931 (Bernanke, 2000).

[153]*Gaceta de Madrid*, 31/05/1931, p.1051-1053.

[154] *"Spain and the peseta" (Financial Times, 13/04/1931, p.4").*

[155]There are very scarce references to the bank run in the Financial Times during these months.

[156] *"Credit for Spain" (Financial Times, 07/05/1931, p.6").*

[157] *"Peseta creates new record" (Financial Times, 30/05/1931, p.1)* and *"Decline of the peseta" (Financial Times, 02/06/1931, p.4).*

[158]*La Epoca*, 27/05/1931.

[159]*El Sol* reported that: *"A meeting between members of commerce and real estate industry took place in Madrid, in order to take all actions possible to stop the crisis in real estate as a result of the restrictions in banks' credit"*, *El Sol*, 29/05/1931, p.1.

[160]This appeared in all main newspapers. The one I cite is from *Ahora*, 28/05/1931, p.6.

[161]*El Liberal*, 28/05/1931, p.4.

[162]*La Libertad*, 28/05/1931.

[163] *"Peseta's low level" (Financial Times, 02/06/1931, p.7).*

[164] *"Spanish credit in Paris" (Financial Times, 11/06/1931, p.6).*

[165] *"Spain after the election. Firmer pesetas." (Financial Times, 01/07/1931, p.6).*

[166]The Government guaranteed 50% of the gold shipments to France.

[167] *"Peseta stabilisation", (Financial Times, 24/08/1931, p.5).* The actual target was 51.9 (Martín-Aceña, 1984).

[168]See Martín-Aceña (1984, p.237-251) for a detailed account.

[169] *"Peseta credits" (Financial Times, 28/08/1931, p.5).*

[170]In fact, four of the largest six banks had their headquarters in Madrid, where they also conducted the majority of their operations with the BdE, especially during the 1931 crisis.

[171]These are: *Soler y Torra Hermanos* (SOLE), *Banca Tusquets* (BTUS) and *Banco Comercial de Barcelona* (BCBA). For this, I am especially indebted to Dr. José Antonio Gutiérrez, from the Historical Archive of the Banco de Santander, who patiently walked me through the bank's archive to find as much useful data as possible.

[172]The proclamation of the Republic had almost immediate effects on the stock market, the exchange rate and the banking sector. Considering its size, the stock market shock had a relatively small effect on most banks, as mark-to-market for shares and bonds (private and public) was suspended until December 1933. Therefore, banks did not enter into a fire-sale of securities. The stock market crisis had, however, an indirect impact on the way the crisis unfolded. Banks had become used to pledge public debt at the Banco de España under favorable conditions since the early 1920s. The government could issue new debt, which it did at nominal yields above the Lombard rate of the BdE, thus providing an incentive for banks to subscribe it and keep expanding their loan portfolios by pledging it at the BdE. However, just after the proclamation of the Republic, the price of public debt and gold bonds collapsed. Rumors about default on public debt issued by the Dictatorship started to circulate, as well as concerns over the ability of the Government to service its debts in foreign currency (gold bonds). Despite on 16 April 1931 the Minister of Finance claimed all debt would be acknowledged and repaid (Sala, 2015b), the price of public debt fell sharply until a permanent Government was formed in October. Because of this, it became more costly for banks to use public debt to obtain liquidity from the BdE. Therefore, the stock market crisis had an effect insofar banks did not hold eligible bills of exchange that could be rediscounted at the BdE. In sum, although affected by the stock market correction, the asset side of banks' balance sheets was relatively protected by the freezing of their shares and stocks' book value. This explains why Spanish banks suffered little capital losses after the crisis and why Spain experienced no significant bank failures compared to other countries. For more details on this, see (Jorge-Sotelo, 2019).

[173](Martorell and Julia, 2012, p.270).

[174]Alternative measures of currency mismatch such as share of foreign exchange deposits over total deposits or over total assets do not change the regression results.

[175]Capital ratios enter the regression with unexpected coefficients, signaling that having high capital ratios made a bank more likely to suffer a sharp deposit loss (Columns 4 and 8 in Table 3.1. However, these results are driven by four banks in the 99th percentile of the distribution of capital ratios. This means holding capital ratios of more than 70%, which are very far from the 90% percentile (capital ratios of 50%) and farther from the mean of 25% capital ratios and the median of 20% capital ratios. Interestingly, the coefficient associated to the variable that measures pre-crisis liquidity pressure (i.e. deposit losses between 1930q1 and 1931q1) suggests that suffering a sharp deposit loss during the crisis is not positively correlated with pre-crisis pressure, but rather the contrary.

[176]For example, in its 1931 Annual Report, Banco de Bilbao (BBIL) mentioned that this was the case in a number of provinces in which the bank had opened branches, as depositors feared that their savings would be in danger and run to withdraw deposits (*Memoria Anual de la Sucursal del Banco de Bilbao en Madrid, 1931).*

[177]The newspaper *La Epoca* explained that all banks in Madrid had in fact been inspected in order to see who had withdrawn "unusual" amounts, and that all banks allowed the gov-

ernment to conduct the inspection, including Banco Urquijo de Madrid (BUMA) (*La Epoca*, 22/04/1931.). For example, Banco de Bilbao (BBIL) considered the rumors of expropriation exaggerated: *"(...) the alarmist rumours, that, without any foundation, were propagated about the possible intervention of the State in current accounts (...)"* (*Memoria y Balance de la Sucursal del Banco de Bilbao en Madrid*, 1931, p.5).

[178]It must be noted that an $Allocation_i$ value of 1 does not necessarily imply that the bank could just keep its total loan portfolio afloat. The representative bank had to make a choice between using the emergency liquidity to continue supplying short term credit, invest in other securities, buy foreign exchange to meet its maturing short-term foreign exchange liabilities, and/or maintain its loan portfolio. A given bank could also use its cash reserve to pay depositors back, although it is reasonable to think that banks wanted to keep a relatively comfortable cash reserve given the circumstances. Therefore, $Allocation_i$ ought to be interpreted as a lower bound, because it is likely that actual liquidity pressure was stronger.

[179]Comparison is done with 1934q3 because in October, new political developments caused shock to bank lending although it was relatively small. Also, in 1934q4 there was an important merger between BCEN and BERP.

[180]I deal with the idiosyncrasies of this bank in Jorge-Sotelo (2019).

[181]Results are not driven by Banco de Urquijo de Madrid (BUMA), the aforementioned *outlier*. Introducing a dummy for this bank, increases the coefficient on $Allocation_i$, signaling that after a certain point, decreasing returns kicked in and more liquidity did not translate into more lending. This bank had an $Allocation_i$ value of 5.6.

[182]A way of showing the relative importance of currency mismatches in adding pressure to individual bank balance sheets is to conduct the same estimation but, instead of using OLS, using Weighted Least Squares (WLS). Weighing by bank size adds statistical significance to the currency mismatch coefficient, although it remains relatively weak. That said, it shows that larger banks were more exposed to gold bonds, as confirmed by Figure 3.8 in the Appendix.

[183]A potential identification problem stems from the fact that when banks create loans they also create deposits. Therefore, the drop in deposit values in bank balance sheets might just be capturing that firms reduced demand for loans, canceled them and therefore the given bank experienced a drop in deposits. Because of that, the drop in deposits might not be signaling that the bank is suffering a run but just a reduction in the demand for credit. This would compromise my conclusion. However, there are three reasons why this does not seem to be the case. First, the qualitative evidence presented above proves, first hand, that banks were cutting on credit because of their inability to replace depositors with liquidity from the BdE. Second, the drop in demand for credit would be signalling an automatic worsening of economic expectations right after the proclamation of the Republic. This would fail to explain why certainly the most affected bank by the regime change, Banco de Urquijo (BUMA), maintained its loan porftolio intact throughout the 1930s thanks to liquidity from the BdE. A similar case applies to Banco de Bilbao (BBIL), a bank that did not suffer strong deposit losses and continued to lend throughout the crisis (see Jorge-Sotelo (2019) for more details). Finally, another reason is that the fact that deposits recovered their pre-1931 level by the end of 1934 while loans remained depressed shows that the cash that deposit losses were not the consequence of the contraction in loans demand. If deposit losses were just the product of a contraction in loans, then deposits would have also remained depressed.

[184]This is more evident if we consider the case of two of the largest banks. Banco Urquijo

de Madrid (BUMA) was arguably the bank that was more affected by political developments. The anticlerical stance of the new Republican Government had caused the Company of Jesus to withdraw all its funds from this bank, which lost more than 50% of its deposits between 1931q1 and 1931q3. However, thanks to its preferential access to the BdE discount window, it received excess liquidity and could afford to keep its loan portfolio afloat during the crisis (Figure 3.11). Banco de Bilbao (BBIL), in turn, suffered little deposit withdrawals and thanks to the liquidity received by the BdE could also keep lending.). See (Jorge-Sotelo, 2019) for details.

[185]Supporting evidence for this can be found on the Minutes of the branches of Banco de Bilbao (BBIL). This bank opened a number of branches across Spain during the 1920s and 30s. Every year, this bank reported the main competitors that it faced in its branches; not only in the new ones but in the ones that were already in operation. Among its list of competitors, one can find many of the banks in my sample, including the BdE (*Memorias y balances de las Sucursales del Banco de Bilbao*, various years and branches). In addition, none of the banks included in the sample are from the group of nine Spanish banks that carried the word "Agricultural" in their names, as banks that were linked to agricultural lending did.

[186]Bagehot (1873, p.58-59).

[187]While the idea of the lender of last resort is often attributed to Bagehot (1873), its roots can be traced at least as back as the early nineteenth century or even before (Capie and Wood, 2007). Despite it is widely recognized that the first to conduct such operations was the Bank of England, there are important differences in the interpretation of such a role depending on the monetary arrangement in which Britain operated. When Britain suspended convertibility during the Napoleonic Wars, emphasis was put on quantities, rather than prices. In 1802, Thornton (1802) already pointed to the special role of the Bank of England and the need of a monetary expansion to avoid a collapse in credit: *"It is indeed, in every respect plain that it must be important to maintain, and to maintain carefully, the credit of the country, at that time in particular, when its guineas are few, and are also leaving it; that is the time when our own funds are necessarily low, when the most regular industry should by every means be promoted, and when there is the most need of the aid both of our domestic and foreign credit and it belongs to the Bank of England, in particular, to guard and to superintend the interests of the country in this respect."* Thornton (1802, p.1-22). While Thornton wrote during the suspension period (1797-1821), Bagehot did so when the pound was convertible to gold. This has been interpreted usually as the reason why Thornton did not refer to the interest rate at which this liquidity was provided, while for Bagehot this was *the* central issue in the implementation of LLR interventions (Laidler, 2002). Another reason, pointed out by Goodhart and Illing (2002) is that the usury laws, which capped interest rates to 5% until the 1830s, prevented Thornton from ascribing any role to "penalty rates".

[188]Bagehot (1873, p.199).

[189]Some authors have argued that in the presence of a liquidity shock, the central bank should provide unlimited funds at low interest rates to troubled banks in order to make sure bank runs are avoided (Rochet and Freixas, 2004; Martin, 2006). More recently, Cecchetti and Disyatat (2010) argued that if the nature of the crisis is systemic, liquidity ought to be provided at subsidized rates. This is because the systemic nature of the crisis makes it hard for a specific bank to benefit relative to others or behave strategically, as the risk of contagion is shared. However, they argue that this is the case if the central bank grants uniform access to all financial institutions, which implicitly assumes a well-defined eligibility criteria and unlimited

room for liquidity provision. Regarding the way in which liquidity is provided, for the case of a developed money market the literature has reached a consensus in which the use of open market operations is generally preferable to outright purchases of assets through the discount window (Flannery, 1996; Bindseil, 2004; Chapman and Martin, 2013). One reason lies in the fact that the provision of aggregate liquidity instead of individual bank liquidity can avoid moral hazard and allows banks to compete for funds, which avoids the problem of a suboptimal allocation by allowing banks' need for liquidity to be reflected in its price (Martin, 2009). Regarding moral hazard, Martin (2006) also finds that large liquidity injections at zero interest rates through open market operations (repos) are preferable to a scheme of deposit insurance as they are less prone to cause moral hazard. In contrast, Goodhart and Huang (2005) developed a theoretical model in which they find potential moral hazard by modeling strategic behavior of banks based on the fact that they learn that will be assisted by the central bank. An interpretation of their work is that long-term relationships between the lender of last resort and banks can allow the latter to pursue more risky strategies as banks assume they will have preferential access to the lending facility. This is especially the case if central banks enter into what Bindseil (2014) described as central bank inertia, which is the continuation of non-crisis operations during crisis periods, just increasing their scale. This critique, which has become again a central concern of the lending of last resort policy, was previously stressed by Hirsch (1977). In response to the moral hazard critique, Chapman and Martin (2013) argued that the central bank can restrict lending to an *ex-ante* fixed number of banking institutions in order to induce the whole banking system to monitor its risks better. If banks have to compete for funds or for being allowed to access the discount window, they can bid up the price of these funds until it reaches the expected value of the collateral they provide to the central bank. In this way, the central bank can also obtain information about the real state of the economy, because the price the banks are willing to pay for liquidity carries the information about their valuation of their long term investment portfolios (whose liquidation they are trying to avoid). This rationale, however, builds up on the premise that the central bank can develop anonymous open market operations, which are only a late-comer practice in the history of most central banks, especially in emerging economies (Borio, 1997). Moreover, this interpretation needs to account for the eligibility criteria of the central bank and the political economy that lies behind its institutional design. Frequent access to the discount window might signal a bank's dependency on short term liquidity from the central bank, but it can also lower the cost of screening a given bank's creditworthiness for the central bank through the benefits of repeated interaction (Dreschel et al., 2016; Banerjee, Gambacorta, and Sette, 2017).

[190] Ugolini (2017, p.114).

[191] In 1913, it had provided emergency liquidity to Banco Hispano Americano, when the latter, increasingly exposed to Latin American securities, was affected by the collapse of the Banco Central Mexicano, amid the Mexican Revolution (Tejada Bergado, 2013; Marichal, 2007). One year later, in the summer of 1914, the BdE also provided assistance to banks and bankers following the eruption of the First World War and the consequent freezing of international capital markets. Spanish banks holding bills denominated in Sterling were unable to rediscount them with foreign counterparties, and the BdE had to expand its balance sheet to cope with the shock. While large in magnitude, the intervention, was very short lived (see Appendix the to this chapter). In 1920, the BdE had provided liquidity to the Banc de Barcelona, when the latter was unable to survive the effects that post-war deflation had on its rapidly expanding

balance sheet (Blasco and Sudrià, 2016). Some years later, in 1925, the Credito de la Union Minera suspended payments and was on the verge of dragging down Banco Central. Following pressures by Dictator Miguel Primo de Rivera, the BdE acceded to provide emergency liquidity to Banco Central to avoid contagion (Martín-Aceña, 1984; Tortella, 2001)

[192]In all previous crises the BdE had to deal with one specific institution (with the exception of 1914). This implied that systemic risk was not evident, and therefore, banks that did not undergo liquidity pressure continued to operate normally. This was the case in 1920, when the failure of the Banc de Barcelona did have almost no effect on the rest of the country, although it had strong implications for regional credit. Similarly, in 1925, let aside Banco Central (which was the bank that received assistance from the BdE), the rest of the banking system did not suffer substantially. While banks' deposits dropped in 1925, bank lending remained stable (see Chapters 2 and 3).

[193]Some reopened their doors, like Banco Hispano Americano in 1913, and some didn't, like the Banc de Barcelona in 1920

[194]See Chapter 5 for a more detailed discussion. Even the main banks' association, the *Consejo Superior Bancario* (CSB), was not entirely sure about its own member banks' fundamental weaknesses. For example, when discussing banks' portfolios of stocks and bonds during the crisis, the President of the CSB claimed: *"(...) these proposals only make sense if the CSB is informed about the real situation of all banks, and since this is not the case, I am going to have to decide without knowing the real situation. This will have good effects on some banks and bad effects on others. Knowing the external face of banks is not knowing the true situation of banks."* (*Acta Ordinaria del Consejo Superior Bancario, 19/12/1931*). This discussion took place in December, nine months after the beginning of the crisis. It is therefore plausible to think that information in April was much less reliable. This is not to say, however, that the BdE had no information on banks' balance sheets. The CSB sent balance sheet data to the BdE on a quarterly basis, but balance sheets were too aggregated to tell, and could easily hide exposure to different types of risks, as the board of the CSB lamented. Importantly, the BdE could not know which kind of bills of exchange banks held unless they had rediscounted them frequently before the crisis.

[195]In previous crises, bank troubles had a clear origin in the asset side; signalling a depreciation of their portfolios due to a lack of diversification, excessive exposure to specific markets or simply by a sudden external shock. This helped the BdE to discriminate between cases in which a given bank would be provided with emergency liquidity or not. While the criteria of the BdE for deciding which banks were allowed to fail or not has been long discussed in the literature, with frequent allusions to politically motivated biases (Sardà and Beltran, 1933; Cabana, 2003, 2007), sudden and unexpected shocks to banks' liabilities that are unrelated to fundamentals pose a more difficult problem for a central bank in terms of discriminating among borrowers. In the case of the BdE, this was coupled with the lack of timely information on bank balance sheets I described above.

[196]However, the essentially political nature of the bank run allowed the BdE (and the Government) to learn which banks could be *certainly* under more pressure from their depositors. This was notoriously the case of Banco Urquijo de Madrid (BUMA), the bank that was linked and to a large extent managed by the Company of Jesus, to which the Provisional Government of the Republic became increasingly hostile (Castella-Gassol, 1975; Redondo, 1993). As I show below, this would also affect the allocation of liquidity.

[197]When depositors ran on banks in 1931, Spain's macroeconomic conditions had been severely worsening for at least three years, leaving the country and its monetary authorities in a very fragile position. The peseta had been losing ground month after month since 1928, and by March 1931 it traded at 54% of its 1868 parity with the Sterling, the US Dollar and the French Franc (i.e. with gold). The balance of payments was not in a better position; capital had been leaving the country since 1928, as current account deficits continued to increase (Betrán and Pons, 2018). The stock market boom that took place between 1927 and 1930 had come to a halt. Moreover, during the booming 1920s the BdE had approached the note issuing limit established by the 1921 Banking Law, so when the crisis started in April, notes were at 95% of their limit, something that had never happened before.

[198]While this is might just reflect the margin attributed to financial intermediation, it was far from the norm at the time. Jobst and Ugolini (2016) provide a survey on different central bank practices at the time, while Jobst and Scheiber (2014), Lazaretou (2014) or Hinic, Durdevic, and Sojic (2014) provide cases (Austria-Hungary, Greece and Serbia/Yugoslavia, respectively) similar to the Spanish case in which market rates were above central bank rates. See Appendix for details.

[199]See Chapter 2 for details on the 1921 Banking Law and its effects on interest rates.

[200]These particularities did not go unnoticed by contemporary observes. Prominent economist José A. Vandellós commented on the problems associated with this interest rate structure: *"(...) in countries with more developed financial systems, banks are much more independent from the central bank, and usually the discount rate of private banks is below the official rate of the central bank. However, in Spain, banks follow the official rate, having a positive difference between the rate they are charged and the rate they charge to their clients"* (Vandellós, 1936, p.97-98).

[201]As described by Bignon et al. (2012) for the case of Britain and France, for example, when money markets dried, market rates hit the central bank rate, which was a ceiling, rather than a floor. If banks were willing to pay higher rates for accessing the central bank liquidity facilities, they could do so. This mechanism, which Bagehot (1873) described as giving incentives for banks to return to interbank lending, was also a way of protecting the gold cover from internal and external drains, and to ensure efficient allocation of limited reserves. While eligibility of collateral and the identity of the borrower still mattered, as Flandreau and Ugolini (2013) showed, the pricing mechanism allowed for banks to reflect their price-elasticity of demand for central bank money and thus, in principle, allocate limited reserves more efficiently

[202]*Art. 16. Estatutos del Banco de España* (1900).

[203]After scrutinizing the BdE's daily operations in Madrid, I found that this rarely happened, and when it happened it was the case of a specific operation where a large sum was involved.

[204]Unfortunately, I have been unable to access information on banks' credit scores at the BdE. I had access to some information on credit scores for firms and for a couple of small banks in Barcelona, but no systematic information was available when I visited the BdE's Historical Archive. That said, the fact that CSB membership granted banks with access to advances on public debt would reduce the informational value of credit scores, because all CSB banks could borrow from the BdE by pledging public debt as collateral and the BdE was forced to accept that. Individual quantitative credit limits are also not available systematically.

[205]The BdE claimed that it would not raise haircuts for the rollover of advances, but this did not include new advance operations, to which banks had to resort to pay back depositors during the bank run.

[206]Sardà and Beltran (1933, p.62).

[207]See for example, King (1936) or Truptil (1936) for a contemporary explanation of eligible bills at the discount window of the Bank of England and Bignon et al. (2012); Flandreau and Ugolini (2013) for a detailed analysis of the lending policy of the Bank based on the eligibility criteria. In particular, Flandreau and Ugolini (2013) move beyond the traditional account advanced by Capie (2002) of the discount window of the Bank of England being made of *"frosted glass and raised just a few inches"*, in which the Bank of England did not care about the counterparty, just about the collateral brought to the window. For a detailed explanation of the case of France, Avaro and Bignon (2017).

[208]*Acta de 10 de Enero de 1931. Libro de Actas del Banco Urquijo de Madrid. Libro 4, p.367.*

[209]A more recent discussion about this can be found on Anson et al. (2018).

[210]*Acta de 22 de Abril de 1931. Libro de Actas del Banco Urquijo de Madrid. Libro 4, p.400.*

[211]In Chapter 5, I also provide a clear example of this: the case of Bauer y Cia. See also López Morell (2013).

[212]Banco Urquijo was discussing joining other banks in the capitalization of Banco Aragones de Credito. *Acta de 10 de Enero de 1931. Libro de Actas del Banco Urquijo de Madrid. Libro 4, p.367.*

[213]Quotes are grouped into a single one for the space reasons. They are all from *Libro de Actas de la Comision Permanente del Banco Central.* Respectively: Libro 2, p. 298 (28/03/1925), Libro 3, p.146 (29/07/1925), Libro 4, p.156 (01/11/1930) and Libro 5, p.75 (26/06/1932).

[214]*Acta de la Reunion Extraordinaria de la Comision de Operaciones del Banco de España*, 17/04/1931.

[215]*El Sol* 24/05/1931.

[216]The amounts included in the term *Liquidity from the* BdE_i are BdE notes ready to be used to liquidate clients' retail deposits.

[217]It must be noted that an $Allocation_i$ value of 1 does not necessarily imply that the bank could just keep its total loan portfolio afloat. The representative bank had to make a choice between using the emergency liquidity to continue supplying short term credit, invest in other securities, buy foreign exchange to meet its maturing short-term foreign exchange liabilities, and/or maintain its loan portfolio. Moreover, for a given bank it was easier to pay depositors back without this affecting its cash reserves than paying them back by running cash reserves down. Therefore, the measure of liquidity pressure ought to be interpreted as a lower bound, because it is likely that actual liquidity pressure was stronger.

[218]See Bindseil (2014, p.275-279) for details.

[219]While the two measures aim at the same–quantifiying a given bank's reliance on the central bank–they both have shortcomings. One the one hand, $Allocation_i$ can't provide a long term notion of the system's reliance on the central bank, because it *needs* a bank to lose deposits for it to make sense quantitatively. A given bank might borrow from the central bank without losing any deposits and this would produce misleadingly large results with no informative value. Bindseil (2014) measure, while useful to provide a longer term view on aggregate reliance on the central bank, does not include the variation of deposits in its measure of proportionality. This is because the latter considers a bank to be borrowing proportionally if the bank's behaviour is in line with the rest of the system; it does not account for variation in the liabilities of banks, which can affect banks' reliance on central bank liquidity during a bank run. Instead, $Allocation_i$ aims at capturing indvidual bank's needs of liquidity (i.e. the amounts of central

bank money that are needed to repay depositors and keep the length of its balance sheet stable) during a liquidity crisis.

[220]I exclude FONZ from the sample because it has an $Allocation_i$ value of 20, precisely because of the problems outlined above, as the bank did not experience deposit losses but still borrowed heavily (relative to its size) from the BdE.

[221]This is in line with the argument advanced by Martín-Aceña (1984) in which he suggested that the *automatic* liquidity of of banks' portfolios of public debt helped avoid the widespread collapse of the banking system.

[222]See Chapter 3 for details on contemporary concerns over banks suffering from not being able to borrow enough from the BdE.

[223]It could be, however, that pre-crisis borrowing is just correlated with banks' portfolio quality. Some banks might have had frequent access to the discount window of the BdE simply because they had *better* bills. This is unlikely, however, if we think that the bank that had more access to the discount window before the crisis, Banco Urquijo de Madrid (BUMA) could count on the BdE not conducting a thorough screening of the bills the bank brought to rediscount. Rather than that, it would be more plausible to argue that some banks might have deliberately chosen not to rediscount bills with the BdE until the unfolding of the crisis made it unavoidable. This makes sense if we think that, at the time, many Spanish banks considered the BdE a competitor in the bill market. This was not uncommon. For the case of Italy, Battilossi (2009) found that banks would not be keen to disclose their bill portfolio to the Banca d'Italia because they feared losing market share. A similar situation might have been in place in Spain. This would be supported by the fact that neither of the two largest and most widely branched banks in Spain at the time, Banco Hispano Americano (BHAM) and Banco Español de Credito (BECR) did almost not discount any bills before the crisis even if they held the largest bill portfolios and were, by far, the most commercially oriented banks in Spain. Finally, and as argued above, it could be that BUMA operated as an extension of the BdE in the bill market, screening bills for the BdE which would, in turn grant open access to its discount window. While this would explain why BUMA relied so much on the BdE already before the crisis, it would still not tell us a lot about the quality of its bill portfolio. (After having accessed what remains from Banco Urquijo's accounting books, I have not been able to identify which types of commercial paper they held or brought to the discount window).

[224]*Actas de la Comision de Operaciones del Banco de España* L.12107, p.174.

[225]The sample is very small, data on deposits is at best monthly, and data on borrowing is daily. In addition, the price of public debt kept falling as the crisis unfolded, which makes it difficult to rationalize banks' demand for liquidity at the BdE by each type of operation based on the relative cost of each of the two borrowing instruments: discounts or advances. While the cost of borrowing from the BdE through rediscounting bills was unaffected until the discount rate was raised, banks using Lombard lending against public debt had been finding it more and more expensive due to the falling price of collateral, which the BdE accepted at market prices. There are references in the minutes of the Board to the BdE relaxing the haircuts on the reposition of collateral. However, there is no mention on the same happening to new borrowing. New borrowing through advances surged during the crisis, so the effect of relaxing the haircuts on the rolling over of advances was probably small.

[226]This had also been suggested by JP Morgan during the first days of the crisis as a solution to Spain's banking and currency crisis. See Martín-Aceña (1984, p.238).

[227] *Acta Extraordinaria del Consejo Superior Bancario*, 15/04/1931, p.269.

[228] During the first weeks of the crisis, BECR was the bank that complained more loudly about the need for raising the limit of notes in circulation, while others seemed less pressured (BHAM) and some did not complain at all (BUMA). Juan Manuel Urquijo, the vice chair of BUMA and spokesman of the CSB remained in complete silence during these discussions, while Pablo Garnica (BECR) complained in repeated occasions (*Actas del Consejo Superior Bancario, various dates* (see text).

[229] *"(...) the convenience of studying and deciding over a moderate increase on the discount rate and other interest rates as means of regulating circulation of notes, to which the Ministry of Finance and the whole Government agree as a matter of public interest and doubtless convenience (...)" (Actas de la Comision de Operaciones del Banco de España, 07/07/1931 and 08/07/1931, (L.27159, p.174-185)).*

[230] *La Gaceta de Madrid*, 09/07/1931, p.251.

[231] Public debt had been almost an automatic source of liquidity for banks since 1921, but given the rumours about default and the uncertainty about the stability of the new regime, it had suffered a sharp drop in its price, making it a very expensive way of obtaining liquidity at the BdE for any given bank that held eligible bills of exchange.

[232] As I explained above, this bank was the one that proposed that the BdE should raise interest rates sharply and lend freely (i.e. follow Bagehot's rule), and only once liquidity pressure had subsided then start addressing exchange rate depreciation. Contrastingly, during the meetings, Juan Manuel Urquijo, vicepresident of BUMA but also Chairman, whose role was consultive within the Board of the Consejo Superior Bancario (CSB), did not leave any registered intervention in the minutes of the CSB, despite Banco Urquijo de Madrid lost almost half of its deposits while these meetings were taking place and was borrowing intensively from the discount window (the position held in Spanish is *Vocal del Consejo Superior Bancario*.

[233] The source is *Liquidez bancaria* (see text). The document contains a measure of liquidity, although it does not contextualize the measure. It is not possible to infer what the BdE considered a desirable minimum, although it can be used to compare the different values of the same measure for the top 6 banks, which is what the BdE used it for. The ratio was calculated using the following formula:

$$Liquidity_i = \frac{\text{Cash} + \text{Interbank assets} + \text{Securities} + \text{Loans}}{\text{Interbank liab.} + \text{Call dep.} + \text{Forex dep.} + \text{Other dep.} + \text{Other liab.}} \tag{B.1}$$

The measure of liquidity of the BdE can be considered as very lax. In fact, it included almost the whole portfolio on it. Under securities, bills of exchange, stocks and public debt were not weighted, regardless of the fact that they were not equally liquid. The same was true with the measure of liabilities; long term deposits were considered as illiquid as sight deposits or interbank liabilities. What can be inferred from the BdE's vague liquidity measure is that all banks' portfolios appear to be considered equal from the point of view of the central bank, and thus the measure is comparable, regardless of its actual validity as a realistic liquidity ratio.

[234] This is a good proxy of banks' dependency on BdE liquidity because interbank deposits mostly include the credit accounts at the BdE. Thus a value of this ratio that equals 1 means

that the bank is equally funded by retail deposits and by rolling over of its credit accounts at the BdE. A bank with a value of 0 is entirely independent from the BdE and relies only on retail deposits. Banks with values higher than 1 are funded mostly by BdE liquidity.

[235] *El Economista* was one of the oldest and most prestigious weekly journals about finance and economics in Spain. It was published on a weekly basis and provided not only quantitative information, but also insightful discussions on the relevant discussions in Spain and the situation of other countries' economies.

[236] *Actas de la Junta de Gobierno del Banco de Bilbao, 01/09/1914, Libro 3, p.279.*

[237] *El Economista*, 1914, p.1168.

[238] Martín-Aceña et al. (2013)

[239] *Libro de actas del Consejo del Banco de Vizcaya, Libro 3, p.36.*

[240] *Libro de actas del Consejo del Banco de Vizcaya, Libro 3, p.53.*

[241] *Libro de Actas de la Junta de Gobierno del Banco de Bilbao, Libro 1, pp. 8, 26, 48, 79, 97, and 231.*

[242] *Libro de Actas de la Junta de Gobierno del Banco de Bilbao, Libro 3, p. 275..*

[243] *Libro de Actas de la Junta de Gobierno del Banco de Bilbao, Libro 3, p. 281.*

[244] *Libro de Actas de la Junta de Gobierno del Banco de Bilbao, Libro 3, p. 290.* For the index, I use the average rate of the two, i.e. 5.25%.

[245] *Libro de Actas de la Junta de Gobierno del Banco de Bilbao, Libro 4, p. 94..* For the index, I use the average rate of the two, i.e. 4.75%.

[246] Other authors, however, have used the 3-month bill rate discount from banks to firms as the best proxy of a money market rate. See Jobst and Scheiber (2014); Lazaretou (2014) and Hinic et al. (2014).

[247] Blasco and Sudrià (2016) show that the Banc de Barcelona was also discounting below the BdE rate before WWI.

[248] *Actas del Consejo Superior Bancario (CSB), 28/09/1926.*

[249] In 1900, banks deposits accounted for 35% of the total and those in the Banco de España for the remaining 65%. By 1919, banks accounted for 70%. At the end of the period, banks held more than 90%.

[250] This bank was created in 1857 as a bank of issue under the so-called free banking period in Spain (1856-1869). When the Banc de Barcelona went bankrupt in 1920, the Banco de Bilbao became the oldest bank alive in Spain (excluding the Banco de España) and still exists today, after several mergers and acquisitions.

[251] The fact that this information was not at hand even for the Banco de Bilbao, is a telling one about the total absence of the market that had existed before.

[252] *Actas de la Comision de Operaciones del Banco Central.*

[253] There are many examples of this. On the 28th of December 1928, after rising the discount rate, the Banco de España argued that its operations would involve only "purely commercial" bills (*Actas de la Comsion de Operaciones del Banco de España, Libro 12.101*). On the 20th of April of 1931, during the banking panic in Spain, the Banco de España urged to "banks should operate mainly on commercial transactions (...) and should restrict the concession of credit through discount of financial bills" (*Actas del Consejo de Gobierno del Banco de España, Libro 27.159, p.56.*).

[254] This is possible for the period 1921-1925.

[255]The first column of Table 5.2 shows that Banco de Cataluña accounted for 17.3% of total deposits of banks headquartered in Catalonia. Since balance sheet data from the *Boletines del Consejo Superior Bancario* only provides consolidated figures, I am unable to produce a disaggregated account at the branch level that could provide a more realistic estimate of these banks' regional market share. This implies that regional shares in the first column of Table 5.2 are overestimated, as they do not include branches of other large banks Spanish banks in Catalan cities. This is problematic because banks with headquarters in Madrid gained strong presence in Catalonia after the failure of the Banc de Barcelona in 1920 (Sardà and Beltran, 1933; Cabana, 2007). By the time of the 1931 crisis, all top Spanish banks had branches, at least, in Barcelona, but also in other cities and towns of Catalonia. These figures also fail to account for banks headquartered in Catalonia that branched in the rest of Spain, although this is a not a problem since the only banks falling under this category were Banco de Cataluña and Soler y Torra Hermanos. If anything, including this would reduce the market share of Banco de Cataluña in Catalonia even more. Additionally, foreign banks' branches in Catalonia are not included, which is also inflating the market share of failed banks. By 1930, for example, Crédit Lyonnais, the Anglo South-American Bank, the International Banking Corporation and Société Générale had branches in Barcelona, among others (*Memoria de la Sucursal del Banco de Bilbao en Barcelona*, 1930, p.4.). While I can not deal with the problem of neglecting branches of banks headquartered in Catalonia in the rest of Spain and the presence of foreign banks, I was able to collect non-systematic but disaggregated data at the branch level for some of the largest banks in Spain. This includes Banco Hispano Americano (BHAM) and Banco de Bilbao (BBIL). For BHAM, the data comes from the bank's inventories, which were reported in its books at the branch level (*Inventario N.3, Banco Hispano Americano. L.6217. Archivo Historico del Banco de Santander*). This does not provide total volume of deposits at the branch level, but provides interest earnings and earnings from commissions charged to clients. This helps improving the estimates of the regional importance of the three failed banks in Catalonia in 1931. By the end of 1930, Banco Hispano Americano's branches in Catalonia accounted for 7.3% of the bank's interest earnings and 4.7% of the commissions it charged. By that time, the bank held total deposits of 1258 million pesetas in deposits. It is plausible to assume that interest earnings and commissions were proportional to the amount of deposits held by the bank at each branch. Thus, taking 6.0% as an average estimate of the share of the bank's deposits in its branches in Catalonia, this suggests that the bank held around 75 million deposits in Catalonia. For the case of Banco de Bilbao, a precise measure of the share of the bank's deposits in Catalonia can be obtained, as data comes from the balance sheet of its branches outside Bilbao (*Memoria de la Sucursal del Banco de Bilbao en Barcelona, Reus, Sabadell y Tarrassa*, 1930). By the end of 1930, Banco de Bilbao held 773 million pesetas in deposits, from which 86 million, or 11%, were held in Catalonia. Adding the contribution of these two banks to the total pool of deposits in Catalonia, this reduces the market share of failed banks from 24.1% to 20.9% (Table 5.2). This measure can be considered to substantially overestimate the importance of these banks, as it does not account for branches of other large banks such as Banco Español de Crédito, Banco de Vizcaya or Banco Central. A conservative estimate of these banks' market shares in Catalonia can be constructed by assuming that they held 6.0% of their deposits in Barcelona, as Banco Hispano Americano did, but well below the 11% of Banco de Bilbao. Adding this estimate to the total pool of deposits in Catalonia, reduces the market share of failed banks to 18.6% (Third column in Table 5.2). Another adjustment is due in order to have a more realistic estimate.

Deposits in Banco de Cataluña, which after the two previous adjustments account for 13.4% of deposits in Catalonia, contain a very large share of funds deposited by the Government, and therefore should not be counted as part of private sector deposits. These deposits are associated with the oil monopolies in Spain, and were deposited by the Government at the bank in 1927 (as I discuss below). While precise figures are not available, the evolution of deposits in Banco de Cataluña throughout the 1920s is revealing. Right after the government deposited funds from the oil monopolies in the bank, its deposits almost tripled (Figure 5.5). A safe estimate of the share of the Government's deposit in the bank, therefore, can be placed at around 50%. This implies that its market share for deposits in Catalonia (retail and interbank) would be around 6.7% instead of 13.4%, thus bringing down the market share of failed banks in Catalonia from an initial estimate of 24.1% to a final estimate of 11.9%.

[256]In 1835, Daniel Weisweiller, an agent of the Rothschild House, was sent to Spain as part of the family's extension of a global network of Banking Houses (Ferguson, 1999; Penn, 2000). Twenty years later, Weisweiller joined Ignacio Bauer under the name of Weisweiller & Bauer Cia. When Weisweiller died in 1892 and Ignacio Bauer became the only representative of the Rothschilds in Spain. Ignacio Bauer died in 1895 and his son Gustavo took over the banking house, which started to operate under "Bauer y Cia". When Gustavo Bauer died in 1916, his sons Ignacio and Alfredo took over the bank, with the approval of the Paris House. They constituted the bank as "Bauer y Compañia". The bank became very inactive during the first half of the 1920s, as the Bauer brothers limited the operations to a very conservative standard (López Morell, 2013). However, along with the strong expansion of the banking system and the Spanish economy during the second half of the decade, the bank started to expand. In particular, the Bauers invested into a new publishing Society, the *Compañía Iberoamericana de Publicaciones* (CIAP). The Society purused a very strong expansion plan from 1928. To fund this, the CIAP issued three month bills of exchange that would be accepted by Bauer y Cia and rediscounted with the Banco de España. In January 1931, Alfredo Bauer communicated the Rothschilds in Paris that he was broke. As the CIAP started accumulating losses, the bank . According to a report issued by P.Jardot, a representative that the Rothschilds sent to investigate the situation of Bauer, by June 1931, the bank had assets worth 25 million pesetas and liabilities worth 30 million. The bank closed its doors on July 3rd, and was liquidated in a process that lasted 10 years.

[257]Among others, the Society held the publishing rights of Manuel Azaña (who would become president of the Second Spanish Republic), Eugeni d'Ors, Juan Ramón Jiménez, Salvador de Madariaga, Antonio Machado, "Azorín", Ruben Darío, Miguel de Unamuno or Ramón María del Valle-Inclán, among others (López Morell and Molina Abril, 2012, p.120).

[258]López Morell (2013, p.347-349)

[259]López Morell (2013, p.345).

[260]By the time of liquidation, the bank held a significant portfolio of securities from Latin American countries, including, for example, Argentinean utilities bonds, which became very difficult to liquidate after the failure (*Rothschild Historical Archive, 111/459*).

[261]When examining daily borrowing from Bauer at the discount window of the BdE, it is surprising that its operations usually involve one bill of a very high denomination and with rounded values. This is a clear sign that the bills were issued by CIAP in order to be rediscounted. In comparison, virtually all the remaining operations of the rest of banks have not rounded values, which proves that they had been originated from a trade transaction. This

is not a trivial observation, since the BdE always reported its concerns over banks bringing "financial" or "accomodation" bills to its discount window, as it was a firm supporter of the real bills doctrine. Bauer's borrowing, however, does not seem to follow this strict policy. It is apparent, then, that the bank did indeed enjoy a certain special treatment from the BdE, as López Morell and Molina Abril (2012); López Morell (2013) suggests.

[262]Banco de Bilbao was also involved in the seizure of Bauer y Cia's assets. The correspondence and the liquidation process, involving the House of Rothschild in Paris, Ignacio Bauer's wife and the two Spanish banks is available at *Rothschild Historical Archive, ledger 111/459.*

[263]The first was a public monopoly, while the second was a private company. CEPSA was founded after CAMPSA, when the Spanish government wanted to explore oil fields in Venezuela, something that CAMPSA did not have the capacity to do

[264]The bank, in fact, came to be known for some time as "Banc de Recasens", as it was, at its inception, an enterprise with which both brothers (and Evarist Fabregas, a co-founder) aimed at reviving the dynamism of Catalan banking and eventually aiming at having a Catalan "bank's bank" or central bank (Lluch, 1968b).

[265]During the second half of the 1920s, Calvo Sotelo claimed that *"the CAMPSA bankers lived in the best of all worlds, happy and carefree, apparently with no other mission than that of mere and simple resale. But the monopoly was not simply an organization of retail gasoline sales!"*. With this, the Minister referred to the fact that Banco de Cataluña was not accomplishing the investment projects that had committed to by holding the deposits of the oil monopoly (Cabrera and del Rey, 2007, p.35-36).

[266]*Rothschild Historical Archive, 111/459.*

[267]Letter sent on the 25 of September 1930, *Rothschild Historical Archive, 111/459.*

[268]See Lluch (1968b,a), Cabana (2003) and Velarde (2015) for more details.

[269]See Chapter 2 and Cabana (2007). The bias against Banco de Cataluña was also highlighted by the lawyer of the bank, Pedro Corominas, who claimed: "[the Minister of Finance] *can't digest the Statute of Autonomy of Catalonia, and did not find a better way to make it collapse than to push the Banco to fail."* See Sala (2015a) for more details.

[270]On the contrary, Tortella and Palafox (1984) concluded that the Ministry of Finance withdrew the oil funds because of the imminent failure of the bank. According to them, the withdrawal of the current accounts of CAMPSA (the oil monopoly) was a consequence of the failure, rather than the cause, although they do not explain why, if most of the activity of the bank was linked to the oil monopoly, would it have had a sizable problem on it assets that preceded the withdrawal of funds from the Government.

[271]Cabana (2003, p.77).

[272]Ernest Lluch explained how the brothers learned about the failure through the press, as they were not very involved with the day-to-day functioning of the bank. He wrote: *"The arm that hit the bank dead was Indalecio Prieto, one of the main heads of the peninsular socialism, but tightly connected, under the scenes, with the great Basque bourgeoisie, which saw in the Banc* [de Cataluña] *a dangerous competitor. However, Prieto tried, through his political coreligionist Josep Recasens, with whom he aimed at having good relations, a last minute lifeboat operation. Hopefully, the memoirs of Josep Andreu will clarify why and how the Recasens brothers rejected the option."* Lluch (1968b, p.547)

[273]The debate also revolved around the problem of labeling mark-to-market as the cause of the recent financial crisis, rather than dealing with accounting principles as potential limitations

to synergies with other policies that were implemented by monetary authorities in the United States (Smith, Boje, and Melendrez, 2010).

[274]Friedman and Schwartz (1963, p.355).

[275]Friedman and Schwartz (1963, p.356).

[276]As Simonson and Hempel (1993) highlighted, it remains unclear, however, if the meeting was organized by the requirement of Roosevelt, as *"(...) the publicly visible origins do not reveal the behind-the-scenes politicking that actually created them" (Simonson and Hempel, 1993, p.253).*

[277]Eccles made the discussion public by taking it to the New York Times, in which he claimed that *"(...) bankers cannot justly be held responsible for such restrictive governmental policies as confuse soundness with liquidity or true worth with current depressed market value."* (Simonson and Hempel, 1993, p.256-257).

[278]*El Sol*, 17/05/1931, p.5.

[279]*Articulo 37, Libro Primero, Codigo de Comercio (1885). Gaceta de Madrid, 16/10/1885.*

[280]*Acta de 18/11/1931, p.118, Actas del Consejo Superior Bancario.*

[281] *"A 31 de Diciembre de 1931", El Sol*, 13/12/1931, p.11.)

[282]*Actas de la Comision Ejecutiva del Banco Urquijo de Madrid*, L.4, p.124.

[283]Several references to this are present in the banks' press releases. See for example *Revista de Credito, 15/04/1932, p.231-232.*

[284]This subsection draws entirely from the meetings of the Board of the CSB (*Actas del Consejo Superior Bancario*, in particular, *Acta de la Sesion Ordinaria* 18/11/1931 (p.108 *et passim*) and *Acta de la Sesion Ordinaria* 19/12/1931 (p.141 *et passim*).

[285]*Acta de la Sesion Ordinaria del Consejo Superior Bancario, 18/11/1931, p.122.*

[286]*Acta Ordinaria del Consejo Superior Bancario*, 19/12/1931, p.141.

[287]Originally, the CSB suggested "Rehabilitation Fund", but left it open for banks to decide. Ultimately, banks chose a formula with a less negative connotation.

[288]*Gaceta de Madrid*, 28/05/1932.

[289]For the role of clearinghouses and the management of asymmetric information, see Sprague (1910), Timberlake (1978, 1984), Gorton (1985, 2012), Moen and Tallman (2010), or Jaremski (2015, 2018).

[290]Commercial bills of exchange were not a widely used money market instrument among banks, as explained in Chapter 2.

[291]*Imposiciones y reintegros durante el año de 1931, por meses, Anuario Historico del INE, 1931.*

[292]Fornies (1979) provides a detailed account of the different types of social projects that savings banks invested in. These include pious donations, benefits, social spending, cultural spending or the funding of health-related projects.

[293]Fornies (1979, p.293).

[294]*Banco Hispano Americano, Revista Mensual, Año III, Mayo 1931, Num. 19, p.668-669.*

[295]*Movimiento en los Montes de Piedad en España desde el dia 17 de Febrero de 1839, fecha de su fundacion hasta 31 de Diciembre de 1930, Cajas de Ahorros de los Bancos y Sociedades de Credito, Anuario 1930, Fondo Documental del Instituto Nacional de Estadistica.*

[296]For a summary of the debate over the political leverage of banks in financial regulation, see Chapter 2.

[297]*Crisol, 16 June 1931, p.8-9.* as quoted in Velarde (2015, p.95).

[298]*La Epoca*, 22/04/1931.

[299] *Memoria y Balance de la Sucursal del Banco de Bilbao en Madrid*, 1931, p.5).

[300] As quoted in (Velarde, 2015, p.32).

[301] Tortella and Palafox (1984); Martín-Aceña (1984); García Ruiz (1987); Tortella (2001); Martínez Mendez (2005); García Ruiz (1993); Martín-Aceña (2013); Velarde (2015); Sala (2015a); Betrán and Pons (2018).

[302] *Libro de Actas del Banco Urquijo, Libro 4.* contains several entires commenting on the general situation of the economy and the country, including an endorsement to the new regime. However, there is not a single mention to the bank losing 50% of its deposits.

[303] *Acta de 12 de Marzo de 1932. Libro de Actas de la Comision Delegada del Consejo de Administracion del Banco Urquijo. Libro 4. p.124-125.*

[304] I thank Miguel Artola Blanco for pointing to and sharing the source of the report. The source is *"La crise economique, financiere et politique en Espagne. La situation monetaire et le credit de la Banque de France a la Banque d'Espagne"*.

[305] Banque de France (1931, p.7). Another annectdotal source is the famous novel by Arturo Barea, titled *La forja de un rebelde*. Referring to the bank's alleged manipulation of the price of shares it underwrote, the author claims: *"There is another business which is much better. This business is done by Banco Urquijo, which is owned by the Jesuits.*

[306] It is very likely that the King Alfonso XIII held some funds at the bank, but I have not been able to find specific information on that in the detailed accounts by Gortazar (1986).

[307] Cabrera and del Rey (2007, p.8-40).

[308] Albeit no reference to Banco Urquijo de Madrid was made by the author.

[309] In fact, all main banks, again including Urquijo, signed a letter to the Minister of Finance on 29 April in which they committed to collaborate in the fight against capital flight. *"La exportacion de capitales y el Consejo Superior Bancario", Actualidad Financiera, Num 1478, Año XXX, p.5-6.*

[310] *Gaceta de Madrid, Num. 233, p.1368, 21/08/1931.*

[311] *Gaceta de Madrid, Num. 24, 24/01/1932, p.610-611.*

[312] The quote is from Temin (1993, p.97), but a similar quote can be found on Reinhart and Rogoff (2009, p.383). In general, this is the underlying assumption in virtually all accounts of the Great Depression in Spain.

[313] See, for example, Tortella and Palafox (1984), who concluded that *"the Spanish case distinctly differs from those of Italy, Austria or Germany; something which superficially may appear all the more surprising since Spain was soon to become the theater of a bloody civil war. Whatever economic causes can be ascribed to the conflict, a general banking crisis is not among them"* (Tortella and Palafox, 1984, p.105).

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